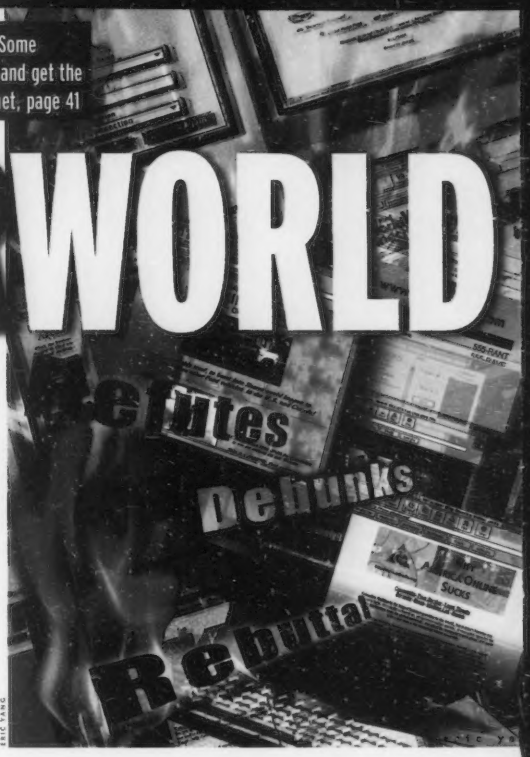


Computer technology rides high during Mars mission. Pages 28 and 53

The Web? Who's got the time? Some people outsource their surfing and get the digest version later. The Internet, page 41

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ERIC YANG

Enough is enough!

▸ *Key corporate accounts vow to phase out Macs*

By Kim Girard

THE SEEMINGLY impossible has happened. Some key, hardcore Apple users said they are finally giving up the ghost after the troubled company last week ousted Chairman and CEO Gilbert F. Amelio — just 17 months after he vowed that Apple Computer, Inc.'s problems were "definitely fixable."

In interviews last week with *Computerworld*, a half-dozen corporate Apple users, with more than 10,000 Macintosh seats, said they are phasing out or expect to drastically reduce the number of Macintoshes they use over the next several years.

For them, Amelio's departure is the final nail in Apple's coffin. As the company floundered

Enough! page 16

Apple inside

Time line
Apple stumbles its way out of the corporate user picture, page 16

How bad is it?
Somber stats paint a bleak picture, page 16

Ex-CEOs on parade
A history of musical chairs in capricious Cupertino, page 16

Misery loves company
Borland users await latest strategy from Apple alum Del Yokum, page 17

Win 95 users to get NT nudge

By Laura DiDio and April Jacobs

THE PUSH IS ON — well, almost.

When Windows NT 5.0 ships sometime next year, Microsoft Corp. will launch a full frontal assault to upgrade enterprise customers from Windows 95 to NT Workstation on the desktop, according to company executives.



SHEA RIPPEY

NASA's J. Briscoe Stephens is concerned about availability of applications

Such a migration from Windows 95 to NT 4.0 isn't feasible today because of incompatibilities between the two operating systems. But NT 5.0 will address most of those issues.

In interviews last week, a dozen Fortune 1,000 users said they are already planning a gradual transition to NT Workstation 5.0 and will do so willingly, provided Microsoft delivers a smooth upgrade path.

"Microsoft's decision to go with Windows NT as its corporate operating system isn't surprising. But

NT nudge, page 98

Suite enticement: CA to give away management tools

By Patrick Dryden

AT THIS WEEK'S CA-World '97 user conference, Computer Associates International, Inc. will push for the widespread adoption of Unicenter TNG by giving away the underlying parts as a framework.

Some analysts predicted that CA's surprisingly bold strategy could slash the cost and complexity of managing far-flung client/server systems.

CA, page 98

Internet flames scorch businesses

"Tommy Hilfiger makes racist comments on *Oprah*." "Beware of GE microwaves." "Disney is antifamily." Everywhere you look on the Internet, someone is badmouthing a company or product — maybe even yours. Cyberspace is full of false rumors, misinformation and diatribes from disgruntled consumers. Companies that don't monitor this Internet traffic and respond deftly may be headed for a public relations disaster. McDonald's and Ford, for example, found that repairing a 'net-damaged reputation can cost millions.

In Depth, page 75

Prices are continually dropping, but PC and laptop users say they're **paying too much for too little.** The main culprits, according to *Computerworld*'s Customer Satisfaction Survey, are IBM, Compaq and Digital. The winners in the survey of 1,651 users are Hewlett-Packard, Dell, Gateway 2000 and Micron. Complete survey results are in **Buyer's Guide,** page 66.



HEIDI HERSCHER

NEWSPAPER

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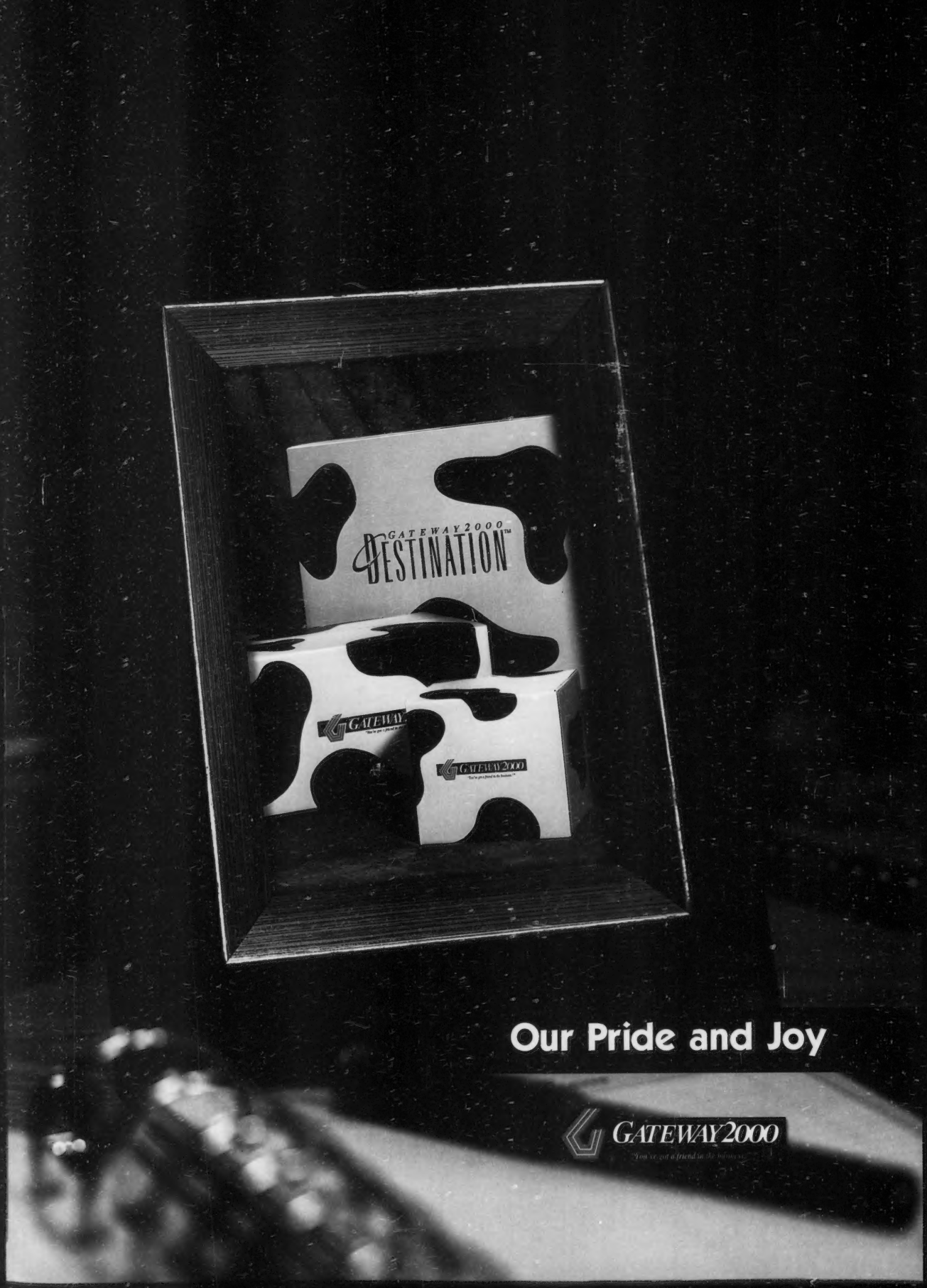
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Jessica Lowe is a "newbie with attitude." Like fellow 1996 IS grads, she's ambitious, savvy and wants it all, now. IT Careers, Page 80

Hennie Ijpelaar rode a roller coaster while installing SAP R/3 at his Dutch amusement park. Software, page 53

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Compaq cuts prices, offers build-to-order

By April Jacobs
NEW YORK

COMPAQ COMPUTER CORP. is slashing desktop prices by as much as 22% and moving to a cost-saving, build-to-order manufacturing system.

Houston-based Compaq also is putting more feet on the street to sell into corporate accounts. It will use salespeople from Tandem Computer Corp. in Cupertino, Calif., which Compaq is merging with.

Compaq's moves are a response to inroads made by Dell Computer Corp., a lower-priced rival. Dell uses a cost-effective, direct-sales approach.

"Compaq's customers are going to like the lower prices, and in theory they aren't going to see anything different. So in terms of price and performance, they're going to like it," said Roger Kay, an analyst at International Data Corp. in Framingham, Mass.

For example, Compaq's Deskpro 2000 entry-level PC will cost $999, a 16% reduction. It features a 166-MHz Pentium processor, a 1.2G-byte hard drive and 16M bytes of memory.

Compaq last week rolled out 13 new Deskpro 2000 and 4000 models, which will be the first offered in the build-to-order program. That will let users choose from a variety of standard configurations that will be built at Compaq's factory as soon as the order is placed. By year's end, the company expects to be able to fill orders within five days, compared with up to several weeks now if products aren't available from resellers.

In theory, build-to-order will let Compaq cut its costs by reducing the amount of inventory resellers hold.

Users will place orders as they always have, through resellers and Compaq sales representatives. And the machines will still be delivered through Compaq's resellers.

"Whether they're going to be able to meet Dell's prices over the longer term is a question, because Dell's been very quiet," Kay said.

"I think what this does is to drive another stake into the heart of the traditional reseller channel," said Brian Brumit, a director at Coopers & Lybrand LLP in Hartford, Conn., and a Compaq customer.

But Brumit said the move could be difficult for Compaq as it tries to essentially provide both in-stock computers and build-to-order models through the reseller channel.

The company also will offer financing and leasing to customers later this summer. Configured-to-order machines, which are highly customized, will be offered in the third quarter.

"I don't understand what exactly the value-add proposition here is for the resellers," Brumit said.

Compaq's plan to increase sales and reduce costs:

- Build-to-order now
- Configure-to-order desktops later this year
- Up to 22% price cuts on Deskpro PC line
- Double its sales and services staff from 4,000 to 8,000 worldwide

Brumit's sentiments were echoed by three analysts at Nikko Research, Inc. in New York. They said the move would please customers, who would like the lower prices, but might cause pain for smaller resellers unable to make enough profit from selling Compaq machines.

Compaq CEO Eckhard Pfeiffer said the company's plans shouldn't cause the same type of confusion and anger that occurred earlier this year among resellers when it first announced its plans to alter its distribution model.

The new plan has been modified in several ways. The company hasn't committed to having resellers assemble any hardware on site and has softened statements that implied it would sell directly to some large accounts. □

Compaq's sales grew to $5 billion for the second quarter of 1997, which ended June 30, 1997. That was an increase of 25%, compared with the same quarter last year.

UP FRONT

Misplaced keys

My 5-year-old daughter has a thing about Li'l Debbie brownies. When she gets it in her mind she wants one, she will not give it up. No amount of reasoning, arguing or shouting will deter her.

I sometimes think the U.S. government behaves the same way regarding encryption. Despite opposition from just about everybody who has any stake in electronic commerce, the government continues to doggedly pursue key-escrow recovery encryption. That's the system by which the feds get to look at encrypted messages if they think it's necessary.



The latest development is the Secure Public Networks Act (*www.senate.gov/~kerrey/encrypt/encrypt1.html*), a bill now before the Senate Judiciary Committee. The measure, billed as a compromise, is really an effort to hard-code key recovery into a national electronic commerce system. Although the language of the bill doesn't technically require key recovery, it makes it impractical for anyone who wants to conduct Internet transactions to avoid government snooping.

People won't send messages if they think the government can look at them.

Much of the computer industry, in tandem with privacy advocates, opposes key recovery because of the (correct) belief that people won't send secure messages if they think the government can look at them. Yet federal security agencies keep at it, believing that the possibility that bad people will use encryption is justification for handcuffing everyone else. They're backed by the Clinton administration, which, ironically, just called for a hands-off Internet policy. The Secure Public Networks Act is bad legislation but is moving through Congress at blistering speed and may become law by the end of this summer. If you have a stake in electronic commerce, write your representatives in Washington and tell them to oppose the bill. I'm going to send mine a package of Li'l Debbie brownies.

Paul Gillin, *Editor*
Internet: *paul_gillin@cw.com*

THE FIFTH WAVE
BY RICH TENNANT



"NO, THAT'S NOT A PIE CHART, IT'S JUST A CORN CHIP THAT GOT SCANNED INTO THE DOCUMENT."

E-mail Rich Tennant at theswave@tiac.net

Pentium II ready for servers

▸ *ECC memory necessary for stability*

By April Jacobs

INTEL CORP. plans to announce its Pentium II processor with ECC memory this week, bringing its latest chip offering up to speed for the server market.

Error Checking and Correcting (ECC) memory is important because it helps safeguard against errors that could bring down a server.

"Customers have been wanting ECC memory because they know it will prevent errors. And if they don't see it, they tend to wait longer to purchase any systems until it's available," said Jennifer Munson, an analyst at Workgroup Strategic Services in Portsmouth, N.H.

"Intel will always be adding faster processors to its lineup. But as far as developing a rounded core of offerings, this announcement will do that for Intel," she said. "Obviously, they want to play in the enterprise level, but until they had ECC, the Pentium II would be just another processor to many companies."

Analysts expect hardware vendors such as Hewlett-Packard Co. and Dell Computer Corp. to announce Pentium II-based systems as early as this week. Other vendors, including Compaq Computer Corp. probably will wait until the chips ship in full volume, they said.

Sources close to Dell confirmed that the company will ship the new PowerEdge 4200 server as a departmental, mid-range server. It will succeed the PowerEdge 4100, a dual-processor Pentium Pro Server.

The PowerEdge 4200 will feature speeds of 233, 266 and 300 MHz. Standard features will be redundant cooling, hot-pluggable disk drives and ECC memory. Hot-pluggable redundant power supplies and RAID support will be optional. The server features the same type of chassis as the rack-mountable 4100 and 6100 PowerEdge models.

When Intel initially released the Pentium II this spring — which features speeds of 233, 266 and 300 MHz — many major hardware vendors lined up with desktop machines to support it. □

Virtual tape servers save real money

By Tim Ouellette

VIRTUAL TAPE servers are becoming a reality, offering users a way to slash their tape storage costs.

Sutmyn Storage Corp. in Santa Clara, Calif., this week will begin shipping Scimitar/VTS. It is a bundle of disk arrays with software that places the most-used tape data on disk so it is at users' fingertips, and that crams as much data as possible into each tape cartridge.

IBM is already shipping its Virtual Tape Server, and Storage Technology Corp., the leading high-end tape systems vendor, in Louisville, Colo., will ship its VSM product next year [CW, April 7].

Scimitar differs from those offerings because it works with existing tape cartridges in users' tape libraries and silos instead of requiring users to buy the newest technology or only certain vendors' products.

For example, IBM's Virtual Tape Server requires users to have the latest Magstar tape cartridges and libraries. And with VSM, users will need to use newer StorageTek tape products.

The influx of new virtual tape products promises to give users faster access to data stored on tape and more efficient use of their existing tape systems.

Most tape cartridges today get only partially filled, requiring more time-consuming robotic tape mounts and more floor space for new tape libraries to hold the ever-growing number of cartridges.

"Virtual tape is a slam dunk for us," said Dan Kaberon, manager of computer resource management at Hewitt Associates, Inc. in Lincolnshire, Ill.

REGAINING CONTROL

Hewitt, the largest outsourcer of human resource management services in the U.S., is testing Scimitar to control an ever-growing population of tapes, estimated at 270,000 right now.

"We are looking to this to be a media masher; we want to save floor space," Kaberon said. "Previously, instead of adding human operators [to manage tape mounts], people bought tape robots. Now, instead of adding additional robotic systems to handle all the tape, users can use virtual tape servers."

Robotic tape systems can cost millions of dollars, whereas virtual tape systems most likely will range from $200,000 to $500,000.

Scimitar works with any tapes in place at a user's site by attaching through the mainframe (mainframe library management software is included with the package) to any MVS-compatible tape system instead of connecting directly to a target tape system.

"If users can turn around and take existing silos and cartridges that they have today and outperform the speeds of newer tape cartridges and libraries, that would be worthwhile for them," said Paul Wolfstaetter, an analyst at Gartner Group, Inc. in Stamford, Conn.

Virtual tape is well-received by users because they have seen mainframe disk prices drop to less than $2 per megabyte and performance increase drastically, while tape technology hasn't changed as fast.

That is true even though more data — three times more, according to some industry estimates — is stored on tape than disk. □

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- **STEPHANIE MOORE, an analyst at Giga Information Group in Cambridge, Mass., offers advice about year 2000 products and services. This will be posted July 14.** ***www.computerworld.com/cbc/***

Time not on Microsoft's side

▸ *Overhaul of SQL Server not due until 1998, leaves door open for Oracle*

By Craig Stedman

MICROSOFT CORP.'S assault on the corporate database market is running up against a tough foe: time.

An initial beta-test version of SQL Server 7.0 — a major overhaul designed to beef up Microsoft's database so it can scale to enterprise levels — was released late last month. But hopes that the new database would be ready for production release this year have evaporated.

In recent months, Microsoft has hedged its bets on shipping SQL Server 7.0 between late this year or early next year. But now it is targeting "sometime in the first half of 1998," said Jim Ewel, SQL Server group product manager at the Redmond, Wash., company. An earlier release "is highly unlikely at this point," he said.

The extended delivery schedule shouldn't hamstring Microsoft's proven ability to sell SQL Server to departments and small businesses. But it gives Oracle Corp. more time to grab database users who are building corporate applications on Windows NT, said Carl Olofson, an analyst at International Data Corp. (IDC) in Framingham, Mass.

And Oracle has been doing a lot of grabbing: Olofson said Redwood Shores, Calif.-based Oracle last year "at least pulled even" with Microsoft on NT database revenue. "Microsoft has been selling futures against reality at the upper end of the database market, and that's where the money is," he said.

Texas Guaranteed Student Loan Corp. uses SQL Server for some "relatively simple" departmental applications because it is so easy to administer, said Andrew Bergstrom, assistant vice president of new products and services at the nonprofit insurer of college loans in Austin.

But in standardizing on NT for all future development, the company chose IBM's DB2 database to run its industrial-strength applications, Bergstrom said. SQL Server wasn't robust enough to compete against DB2 and Oracle when the decision was made last year, he said.

Hoping to break out of its low-end shackles, Microsoft this quarter plans to ship an enterprise version of SQL Server 6.5 that can handle more processors and memory.

SQL Server 7.0, code-named Sphinx, will go much further by increasing the database's 200G-byte capacity limit to a terabyte and adding key scalability features such as parallel querying and full row-level locking.

Microsoft also is building data warehousing features in to SQL Server 7.0 and developing a companion online analytical processing server code-named Plato. The decision-support software was promised for beta-testing this quarter, but Ewel declined to comment on its status last week.



KATHERINE LAMBERT

Aristotle's James Xu: **Should help on big applications with lots of users**

SQL Server 7.0 hopefully will mean faster processing and more flexible querying for users, said James Xu, vice president of technology at Aristotle Publishing, Inc. in Washington. Aristotle runs a voter information database on SQL Server 6.5 and expects to start testing Sphinx this week.

Xu said he wants to be able to run more complex analytical queries against the database, "but I really avoid doing that now." But a 1998 release date for Sphinx is understandable given the amount of changes that Microsoft is making, he said. "They have a lot of work on hand."

Even after SQL Server 7.0 ships, it could be held back at enterprise levels while users wait for NT to mature, said Herb Edelstein, a consultant in Potomac, Md. □

Have I got a fix for you!

An IS manager was approached by a slick-talking salesman who claimed his company could convert any program at the manager's company for $100.

"It sounded like a backyard operation," the manager said.

Welcome to the sleazy side of the year 2000 industry, where some companies are trying to cash in on a $600 billion market.



ROB WESTERBERG

For tips on separating the reputable from the incredible, turn to Managing, Page 59

Netscape packs more into its SuiteSpot 3.1 servers

By Barb Cole-Gomolski

NETSCAPE Communications Corp. is trying to make its server line easier to buy and manage.

The company this week will announce new packaging for its SuiteSpot 3.1 servers. It will offer standard edition and professional edition bundles instead of making users purchase the nine servers separately.

SuiteSpot 3.1 will also include a new management console that lets administrators of World Wide Web sites and intranets replicate changes across all nine servers.

Broad support for the Lightweight Directory Access Protocol (LDAP) is also on tap in the upgrade, allowing sites to share directory information more easily, sources said.

"This is good for us because we're planning to use LDAP extensively," said James Martin, webmaster at Chubb & Son, Inc. in Warren, N.J.

Several Netscape servers power the insurance company's intranet. "It will be much nicer when those servers can talk to each other via LDAP," Martin said.

Netscape, in Mountain View, Calif., declined to comment on the announcements.

ALL THAT AND MORE

SuiteSpot 3.1, due in the fourth quarter, will include a beta version of Compass Server. Based on a user profile, Compass Server filters information on corporate intranets and builds a document index that may be searched.

SuiteSpot already includes Calendar, Certificate, Collabra, Directory, Enterprise, Media, Messaging and Proxy servers.

Along with the upgraded servers, Netscape is expected to announce plans to offer its products through a group of resellers. Currently, most customers buy Netscape software via the Web, according to Harry Fenik, vice president of Zona Research, Inc. in Redwood City, Calif. □

Sun boosts high-end workstations

By Jaikumar Vijayan

SUN MICROSYSTEMS, INC. this week will bolster its position in the high-end Unix workstation market with a new box and architecture.

The company will extend its desktop lineup with a high-end system based on the 300-MHz UltraSPARC chip.

The system is a single-processor version of the Ultra 2 workstation announced earlier this year and will feature built-in Gigabit Ethernet support, Sun's Creator three-dimensional graphics and optional support for a high-definition television monitor.

Prices for the system, which is being positioned beyond the highest end of most Microsoft Corp. Windows NT systems, start at $21,495 for 128M bytes of memory and up to 4G bytes of hard disk space.

S-BUS REPLACEMENT

Sun is also expected to announce a Peripheral Component Interconnect (PCI)-based I/O architecture that will replace its existing S-bus technology.

The move to the industry-standard PCI architecture means Sun can now use the same standardized, low-cost PC components that Windows NT vendors use to build their workstations.

"Throughout the middle to the end of last year, most Unix vendors were like deer caught in the glare of Windows NT's headlights," said Tom Copeland, an analyst at International Data Corp. in Framingham, Mass.

"Now some are finally starting to respond," he said. □

Price of Web poker just went up

▸ *Companies to pay millions for high visibility*

By Mitch Wagner

LAST WEEK'S multimillion-dollar deals designed to bolster the visibility of World Wide Web sites may mark the end of an era of shoestring online budgets.

In the early days of the Internet, a corporate Web site could be built with just a few information systems managers who worked evenings and weekends using secondhand equipment. Now there are so many sites online, corporations are starting to require full-scale business plans and are making big investments in staff, time and money to find their customer base.

Online bookseller Amazon.com, Inc. and florist 1-800-FLOWERS, Inc. last week signed multimillion-dollar cross-promotion deals with major online services and ultrapopular Web sites. Their goal is to leverage the huge visibility of those services and sites to get Amazon.com and 1-800-FLOWERS in online consumers' faces.



Disney is making cross-marketing deals with search engine companies

THE VALUE OF GATEWAYS

The deals are part of a trend emerging as companies find they have to devote extensive resources to attracting customers online. Many firms will choose to pay big bounties to America Online and the major search engines because those companies have close relationships with customers, and they can deliver those customers for other companies, said Chris Stevens, an analyst at Aberdeen Group Inc., in Boston. "There are a few gateways emerging that are controlling a lot of the traffic on the Internet," Stevens said.

"The Internet is slowly getting to the point where it has a critical mass of audience, and you have to have resources of a [certain] scale to reach that audience," said Jeff Morris, senior vice president of new media and technology development at Showtime Networks, Inc. in New York.

The problem is noise, webmasters said. Everyone can go online, and everyone is. Herndon, Va.-based Networks Solutions, Inc., which handles domain registrations (see related story, top right), recently reported its millionth registered site in the .com domain. The common wisdom three years ago was that any company, no matter how small, could go online and find its customers around the world. Now it seems every company, no matter how large, is having difficulty finding its customers — and vice versa — online.

To resolve that problem, electronic-commerce sites are turning to the major search engines and commercial online services in an attempt to buy publicity. Because those sites consistently rank among the most popular sites on the Web, online merchants are cutting deals and paying big bucks to guarantee publicity on America Online, Inc.'s Web site and the search engines run by Excite, Inc. and Yahoo, Inc., for example.

Even the The Walt Disney Co. — with one of the most recognized trademarks in the world — has marketing deals with Excite in Redwood City, Calif.; Lycos, Inc. in Marlboro, Mass.; and Yahoo in Mountain View, Calif., among other popular online sites. Jeff Bender, director of consumer advertising at Disneyonline, said Disney's brand may be well-known, but its for-pay, Internet-based online service isn't.

Disney is advertising the service through conventional media, but many of the customers it reaches don't have online accounts. To find Internet users, you look to the Internet — and you look, especially, to Excite, Lycos and Yahoo, which are the sites many online users visit first and most often, Bender said.

1-800-FLOWERS last week announced a four-year contract with America Online, in Vienna, Va., to be the exclusive seller of flowers and plants on the company's online service. The contract is worth a mind-bending $25 million. It is a continuation of a three-year contract the Westbury, N.Y., flower and plant company already has with America Online. The company expects to generate the money from its marketing budget, fueled by the more than $250 million in sales it expects to do online in that period.

Amazon.com also announced last week a multimillion-dollar advertising contract with Excite and a cross-promotion campaign with Yahoo for undisclosed sums. The deal will be a marketing expense covered by online sales and capital raised in its recent stock offering. □

'net gains hard to quantify

With major resources going into Web sites, corporations are starting to press harder for identifiable return on investment.

For some sites that sell goods online, business managers can see if incoming revenue exceeds outgoing costs. But for many Web sites, return on investment is harder to measure, said Alan Citron, senior vice president of multimedia at Ticketmaster Corp. in Los Angeles, which has joint marketing deals in place with Excite and other sites.

"The issue you face when you're a Web merchant is, what is success?" Citron said. "There's nothing to base it on. Is it simply being in the black financially? Is it growing your traffic at a certain percentage rate a month? Is it simply getting a certain number of eyeballs? The industry will be looking at these sorts of big, cross-promotion deals for the next six months."

That kind of high-stakes gambling doesn't suit many big companies, and they are likely to bail out of high-investment Web sites when they don't see a quick return, said Jeff Morris at Showtime Networks. "A lot of companies are looking to see a return on that kind of investment fast," Morris said. "Over the next couple of years, we'll begin to see a shakeout of who's playing on the Internet and how they're playing."

When the stakes get high, greater attention to business value is required. Increasingly, that means IS departments don't drive the sites. Instead, marketing departments or other business units take the lead, with IS providing technical support.

Meredith Corp. in New York, for example, is about to launch a new version of the *Ladies' Home Journal* site. Until now, the site has been a joint project of the magazine's editors and IS department, with editors creating content and throwing it over the transom to IS to post online. Now, the site is being reworked by its publishers, with business needs taking the foremost priority and editorial, graphics and sales concerns controlling content and how it is presented.

"We're bringing out our heavy hitters to run the Web site, rather than go out and hire kids," said David Cohen, director of new media at Meredith. "We're doing this with a business plan, a creative plan, and handling it totally formally, the way we would launching a new magazine." — Mitch Wagner

Ease of navigation key to successful E-malls

By Stewart Deck

SOME INTERNET shopping center experts say online malls can thrive without expensive billboards. It isn't necessary to shell out top dollar for prime real estate to attract shoppers, but it is vital to keep one thing in clear focus: the comfort of the shopper.

"Anyone who gets into this has to realize it isn't going to be cheap or easy, but it can be done," said David Taylor, an analyst at Gartner Group, Inc. in Stamford, Conn. "But you can't just string together storefront links and expect shoppers to show up." Taylor counseled developers to build a solid infrastructure with secure payment capabilities and messaging features for quick communication.

Complex shopping sites need a sense of transaction completeness and consistency, agreed D. Navin-Chandra, chief scientist at Perot Systems Corp.'s electronic-commerce business unit and a former mall developer at now-defunct Nets, Inc.

An online mall should also clearly define what it has, Navin-Chandra said. "If people can't understand what is available, they won't come back. Sites such as Amazon.com or Travelocity.com have done a great job of explaining themselves and are successful," he said.

With planning, online shopping centers can create a feeling that is difficult for their real-world, brick-and-mortar counterparts: a sense of community.

Craig Ellerbroek, director of the electronic-commerce division at Lockheed Martin Corp.'s Internet Business Solutions group, said these communities can be built around subjects such as hobbies (sports or collectibles, for example) or high-quality merchandise.

Chat features and message forums where shoppers can compare experiences and purchases provide the same function as a real-world bench or sidewalk cafe: They allow visitors to pause, spend a few minutes and look forward to returning. Ellerbroek added that virtual malls can cross-promote items in other stores and set up complex customer loyalty programs (using customer shopping data) that the stores on Main Street can't approach.

Online neon is one feature that can turn visitors away from a mall. Too much graphic flash and dazzle can take too long to download and make site navigation confusing, according to Michael Katz, a senior vice president at Booz Allen & Hamilton, Inc., a New York-based consultancy.

"We only selected vendors that had secure payment facilities and high-quality products," said Tuck Rickards, founder and CEO of Virtual Emporium (*www.virtualemporium.com*), an online mall of 180 stores and more than 5 million products.

"By putting products first and building in ways for the customers to quickly post their opinions and their evaluations, we think we'll be successful," Rickards said. □

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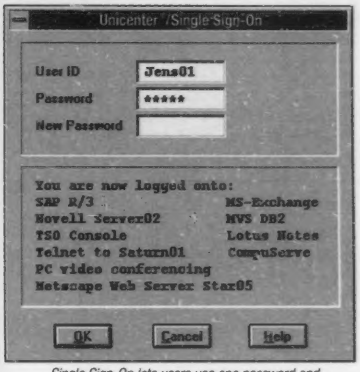
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Users cool on Exchange upgrade

▸ *Scalability lauded, but key features missing*

By Barb Cole-Gomolski

MICROSOFT CORP. Exchange sites will get a more scalable server when the Osmium release ships later this year.

But drawbacks — such as the lack of support for Hypertext Markup Language (HTML) forms in the Outlook client or an enterprise directory — will likely linger long after the upgrade is out the door.

The Osmium release of Exchange, due by year's end, is expected to let companies run more users per server because it removes the current 16G-byte limit on mail storage. It also has improved support for Internet protocols and a new feature, called Dumpster, that will make it easier for administrators to restore messages that have been deleted, according to beta testers.

Users applauded these enhancements because they can save administrative overhead, and in the case of the boosted mail storage, reduce the number of servers needed. But a handful of sites among the 100 early beta testers of Osmium were decidedly lukewarm.

NOTHING THERE

"From what I can see, there won't be that much [in Osmium] for us," said Archie Reed, design architect at Charles Schwab & Co. in San Francisco, an Osmium beta site that is moving 11,000 users to Exchange.

Osmium's support for Internet Message Access Protocol 4 (IMAP4), which allows disconnected users more flexibility in accessing mail, and the Lightweight Directory Access Protocol aren't that important to Schwab at this time, he said.

Schwab's main priority is to get a more manageable directory, Reed said. Exchange currently has its own directory, which Reed described as "inflexible." Users and analysts said a remedy won't appear until Microsoft's Active Directory ships with Windows NT 5.0 some time next year.

Tom Austin, an analyst at Gartner Group, Inc. in Stamford, Conn., said he knows of two large Exchange shops that have frozen their deployments and won't move forward until Microsoft replaces the Exchange directory with Active Directory. "Some of these customers need to manage multiple domains remotely, and that [capability] just isn't there today," he said.

Similarly, some sites have put application development plans on hold because they rejected the Exchange Forms Designer tool as proprietary and weak. Instead, they are waiting to build groupware applications for Exchange, using a HTML-compliant version of Outlook.

Microsoft officials said the company is adding support for HTML forms in Outlook but hasn't yet set a ship date.

Not all sites are unmoved by Osmium, however. Bechtel Group, Inc. in San Francisco passed on the Exchange 5.0 upgrade but can't wait to get Osmium in-house, said Chris Zeck, corporate infrastructure manager. Zeck said the 16G-byte storage threshold has limited the scalability of the firm's servers. "We think Osmium [with its unlimited storage] will help us avoid some additional [server] hardware purchases," Zeck said. □

OSMIUM ENHANCEMENTS

- Support for IMAP4
- Dumpster that lets administrators recover deleted messages
- Unlimited storage on messaging servers
- Updated Outlook Web client that lets users send attachments and schedules

OBJECT DATABASES

Informix mutes Universal Server hype

By Craig Stedman

UNIVERSAL SERVER may be forgotten, but it isn't gone.

Informix Software, Inc. turned out the marketing lights on its new object/relational database after a stunning $140 million first-quarter loss — chalked up in part to the vendor pushing Universal Server too hard, too soon. The software wasn't widely available, and most users weren't ready for its object features.

Seven months after its gala introduction, Universal Server is expected to be kept far from the spotlight when Informix's user group meets in San Francisco next week. Instead, Informix will wave the Windows NT flag for its mainstay OnLine relational databases.

Several early adopters of Universal Server said they haven't seen any pullback of technical commitments by Informix since the Menlo Park, Calif., company put the lid on the database. But Informix did scale down plans for expanding Universal Server's limited hardware support during the second quarter, which forced some interested users to remain on hold.

And other users who like the idea of Universal Server's support for object technology and multimedia forms of data are still trying to find real-world applications that need the new database.

For example, First Chicago Mercantile Services LLC mulled using Universal Server to build an image-enabled payment processing service for banks and credit-card companies. But its customers weren't interested in the image plans, and no other potential uses for the database are on the horizon, said Maribeth Anderson, manager of technology at the Chicago firm.



REID HOCH

Sabre's Brad Jensen: **"Right now is when they should have been marketing Universal Server because it's just about ready"**

"I still consider it to be an interesting product, but even when we were looking at it, the idea we had was kind of a stretch," Anderson said.

On the marketing side, Informix "did come out of the box too long before the product was ready," said Brad Jensen, a vice president at Sabre Technology Solutions, the information technology unit of AMR Corp.'s Sabre Group subsidiary in Fort Worth, Texas. But Universal Server "is finally starting to come together," said Jensen, who is building an object-based data warehouse for AMR's American Airlines unit.

However, Informix did slow down the hardware porting process for Universal Server. The database, which was released on just two Unix platforms, was due to get support for Windows NT and four other Unix implementations in the second quarter. But the NT version is still in beta testing, and only one of the Unix ports made it out the door, Informix officials said.

That leaves the American Medical Association (AMA) on ice because the Sequent Computer Systems, Inc. Unix boxes it uses lack the promised support for Universal Server. "We're still hanging on, but it's hard to get too excited until I can get it," said Jack Look, a data designer at the AMA. □

SAP R/3 users gain options for document management

By Randy Weston

DOCUMENT management vendors are hooking up to SAP AG's R/3 to make it easier for companies to manage important documents in a central location.

ENTERPRISE SOFTWARE

Among the vendors offering R/3-ready document management software are FileNet Corp. in Costa Mesa, Calif., and Documentum, Inc. in Pleasanton, Calif.

The products are geared mainly toward chemical, pharmaceutical and other process manufacturers that are required by federal law to keep strict records.

With those documents stored in workgroups around the world, it can be difficult for other workgroups and corporate headquarters to access the information.

FIND IT FAST

But when a government regulator comes calling, the central office needs quick access to the information.

Currently, headquarters has to shoot off faxes and electronic mail to the various offices and call in an overnight delivery service.

Enter R/3.

Gerry Murray, an analyst at International Data Corp. in Framingham, Mass., said as companies standardize on a single software system such as R/3, it makes sense to link document management systems to it. The result is R/3 becomes the enterprise link between the various distributed workgroups.

"Increasingly, the trend is to make all these systems available so someone can, in fact, answer a question on the phone," Murray said. "Ultimately, the challenge is to make all these reports work together and make these enterprise approaches work."

SOON TO BE INCLUDED

But Murray said it is only a matter of time before vendors such as SAP begin including document management functionality in systems such as R/3, especially as they become more entrenched in vertical markets such as the process industries.

Amoco Corp., a $36 billion petroleum and chemical processing company in Chicago, couldn't wait.

It tested the FileNet system on an R/3 rollout at its Fiber and Fabrics division. It is rolling out R/3 to 10,000 users around the globe, with 5,200 users linked to the FileNet suite for R/3. □

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Shipper saves money by using the 'net as its WAN

By Bob Wallace

INTERNATIONAL Shipholding Corp. expects to save $120,000 per year after replacing its international frame-relay network with an Internet connection between Singapore and its New Orleans headquarters.

On Jan. 1, the shipping company switched to using the Internet as its wide-area network for sending all financial and billing transactions.

IT LEADERSHIP

Previously, "our system response time was slow, we were severely restricted in the number of users we could put on the network, and we could only support one application at a time," recalled Stephen Fraser, director of information systems at International Shipholding. "Adding bandwidth would've addressed these situations, but doing so was cost-prohibitive."

A network upgrade would have required adding two frame-relay lines, a second server, an Oracle Corp. database, additional software from Lawson Software and two people to run the operation, Fraser said. Dodging those costs will produce the estimated savings.

The upgrade would have cost about $150,000, including installation. The Internet connections and the firewalls together cost about $30,000, according to Michele Spoons-Wood, director of systems business analysts at International Shipholding.

Few companies in the entire user community use the Internet in place of a WAN, said Daniel Briere, president of TeleChoice, Inc., a global telecommunications consulting firm in Verona, N.J. "This could be the beginning of a trend for multinationals if global carriers don't come out with coherent international frame-relay strategies and make pricing much more attractive."

"Our system response time was slow ... and we could only support one application at a time."
– Stephen Fraser, International Shipholding

SECURITY CONCERNS

Not surprisingly, International Shipping worried about Internet security and performance when transmitting sensitive financial data. So the company bought two high-end Cisco Systems, Inc. PIX security systems to keep out hackers and encrypt Internet transmissions, Fraser said.

Users in New Orleans and Singapore who had Pentium-based PCs and Windows 95 said they were pleased with the boost in response times when the company switched to the Internet, Spoons-Wood said.

In essence, the company swapped a 48K to 56K bit/sec. frame-relay link for two 1.544M bit/sec. T1 lines that run to an Internet service provider in New Orleans and two 512K bit/sec. lines that run to a service provider in Singapore. The company benefits from today's inexpensive Internet access.

Analysts said Internet access prices — now unprofitably low for some providers — will likely rise within a few years.

"[Internet service providers] assume a normal amount of usage for their fixed-priced, unlimited usage plans," said Tom Nolle, president of CIMI Corp., a Voorhees, N.J., consultancy. "If [they] realize that enough users are going beyond normal usage, they may reprice, and users would lose their cushion."

That doesn't concern International Shipholding.

"Even if we had to pay a premium for our connection or pay for a few additional lines, the Internet would still be the lowest-cost approach, and we could absorb the price increases," Spoons-Wood said. □

International Shipholding's benefits from swapping a WAN for the Internet

- More bandwidth at lower cost
- No need to invest in additional hardware and software
- No additional staff needed
- Network performance increase
- Enough pipe for multiple applications
- Support for more users
- Capacity can be added easily and inexpensively

SHORTS

Tennessee unplugs spam lawyer

The Tennessee Supreme Court has disbarred an attorney whose firm spammed thousands of Usenet newsgroups with ads promising to secure U.S. work papers for unregistered aliens. Among other charges of professional misconduct, Laurence Canter at **Canter & Siegel** was cited by the state's Board of Professional Responsibility for splashing unsolicited ads across the Internet in a way that was "both unethical and egregious." Canter's firm, a longtime target of critics at the Electronic Frontier Foundation and other groups, has offices in Tennessee, Arizona and California.

FBI probes credit-card theft

Officials at **Starwave Corp.** are blaming someone with in-house systems knowledge for intruding on a secure, encrypted order-processing system to gain access to the credit-card numbers of 2,397 online shoppers at the ESPNet SportsZone and National Basketball Association World Wide Web sites. Shoppers received an anonymous electronic-mail message warning they were victims of careless security and their credit-card numbers and addresses were easily available. Starwave alerted the shoppers that their credit cards may have been misappropriated and enacted new security measures. The Federal Bureau of Investigation and the U.S. Secret Service are investigating the incident.

NDS ported to IBM systems

Novell, Inc. last week licensed Novell Directory Services (NDS) to run on IBM's RS/6000 Unix servers and S/390 mainframes. The move is intended to lower management costs and reduce network complexity by giving users a single view of all network resources. IBM's porting of NDS to run on its systems follows moves by other Unix vendors, including Hewlett-Packard Co., Fujitsu Ltd., SCO, Inc. and Sun Microsystems, Inc.

3Com, Siemens team up

3Com Corp. in Santa Clara, Calif., and **Siemens AG** in Munich, Germany, last week announced an alliance to integrate voice and data over a single LAN for corporate users. That will entail getting 3Com's data communications products to work with Siemens' Hicom private branch exchange lines, which are used widely outside the U.S. The technology initially will target call centers and branch offices, which are among the first to use computer-telephone integration.

Intuit picks Internet Explorer

Intuit, Inc. said it has ditched an agreement to bundle Netscape Communications Corp.'s Navigator browser with its software in favor of Microsoft Corp.'s Internet Explorer. Intuit will integrate Explorer into its Quicken, QuickBooks and TurboTax software. Microsoft will carry Intuit information to Explorer users using "push" technology built in to Explorer. The deal is the latest step in the hot-and-cold relationship between Microsoft and Intuit. Microsoft tried to buy Intuit two years ago, but the U.S. Department of Justice killed the deal.

Novell makes pirates pay

Novell in Provo, Utah, recently pocketed more than $1.3 million in software piracy settlements involving five companies and two individuals, the company said recently. The companies involved were selling NetWare and IntranetWare upgrades at higher prices to unsuspecting customers. The settlements are the direct results of leads from Novell's product tracking system and tips received on its antipiracy hotline.

Student finds NT security hole

A security hole in Windows NT can allow local users to get administrative privileges and access other users' files, a Russian student announced recently on the Internet. His NT attack, dubbed "GetAdmin," only applies to local users who gain access to privileges on that group. It doesn't work for outside attackers. **Microsoft** has issued a patch for the problem, available at *ftp://ftp.microsoft.com/bussys/winnt/winnt-public/fixes/usa/nt40/hotfixes-postSP3/getadmin-fix.*

SHORT TAKES **Novell** next week will begin beta-testing GroupWise 5.2, which supports Internet Message Access Protocol 4 and the Lightweight Directory Access Protocol. ... German engineering firm **Carl Zeiss Jena GmbH** has become the first company to go live with **SAP AG**'s R/3 on an IBM S/390 mainframe. The project went from testing to production in six months. ... New York investment firm **Welsh, Carson, Anderson and Stowe**, under the corporate name **CDSI Holding Corp.**, is paying approximately $284 million for **Control Data Systems, Inc.**, an Arden Hills, Minn.-based systems integrator and maker of client/server software. ... **Genicom Corp.**, a printing equipment maker, has been holding talks to buy **Digital Equipment Corp.**'s printing systems business, but no sale agreement was reached last week.

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HTML 4.0 aimed at improving Web site design

By Mitch Wagner

KEY VENDORS and the World Wide Web's chief standards body are lining up behind proposed extensions to Hypertext Markup Language (HTML) designed to keep Web pages looking sharp on different vendors' browsers.

The World Wide Web Consortium last week unveiled the first public working draft of HTML Version 4.0. Along with Extensible Markup Language (XML), the pending next-generation complement to HTML, HTML 4.0 lets Web content developers more easily control the look and feel of documents in conventional PC-based browsers. It also allows those documents to be displayed on a wide range of devices.

HTML 4.0 now enters a period of public comment before the consortium decides whether to adopt it as a final standard — or "recommended standard" — by fall, said Dave Raggett, lead HTML architect for the consortium in Cambridge, Mass., and an engineer at Hewlett-Packard Co.

The devices in question include nonstandard browsers, handheld computers, proposed browser-enabled telephones, computers without mice and computers equipped with speech devices for the blind as well as enhancements for disabled people who can't use a keyboard or mouse.

John Sanders, senior vice president of management information services at Spelling Entertainment Group in Los Angeles, said he hopes the evolving standards will make it easier to design Web pages that are attractive in multiple browser types without testing the pages in all the different browsers.

HTML 4.0 FEATURES

Advanced forms: Creates read-only form entries and adds labels and keyboard shortcuts for controls and titles.

Object support: Standardizes ways to embed objects on a page, including multimedia objects and program code. Also standardizes style sheets and scripting.

"From the earliest beginnings of the Web, there have been concerns about being able to present content with different browser versions," Sanders said. "It just becomes more problematic as extensions to browsers and different dialects proliferate."

The new standards have the support of Microsoft Corp. and Netscape Communications Corp., both of which have begun building the standards into their browsers.

MORE EMBRYONIC

HTML 4.0 was designed to codify and standardize some features, such as frames and style sheets, already implemented in proprietary extensions to the Web in Microsoft's Explorer and Netscape's Navigator. It also was designed to bring some new features to the Web, Raggett said.

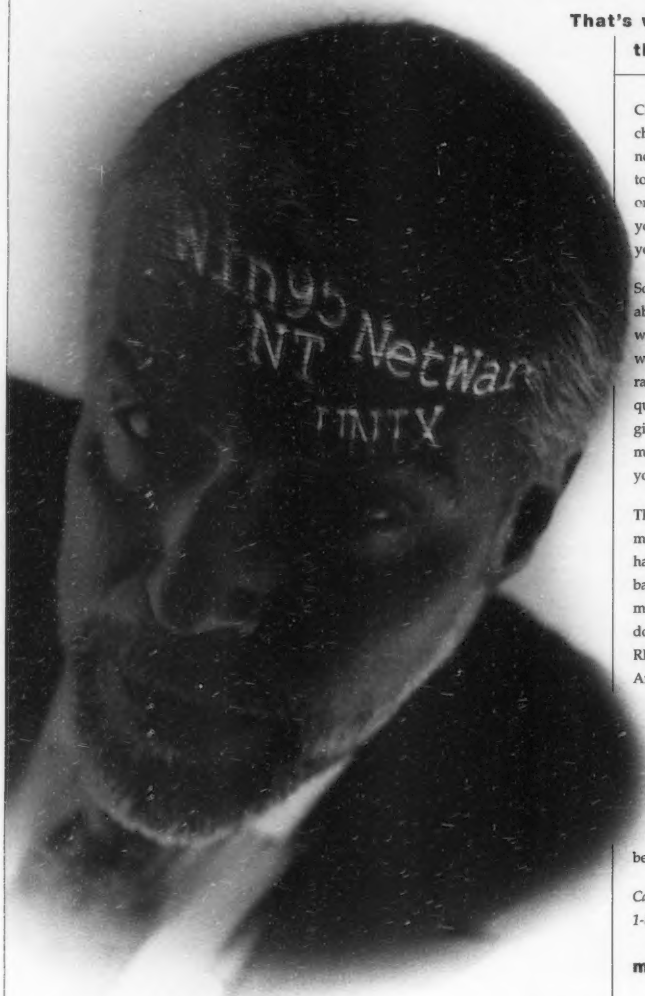
XML is a more embryonic standard that was designed to let developers create their own tags, which control how text is displayed on-screen and interpreted by software.

XML is a subset of the Standard Generalized Markup Language, which was originally created in the 1960s to control displays for mainframes.

XML was designed primarily in order to allow content creators to create proprietary applications that run on the Web, especially on intranets and extranets.

For example, the author of a medical-records application might decide to create a special tag for "allergens," said Tom Johnston, group product manager at Microsoft, which helped develop the standard. □

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Florida	St. Louis ..... Jul 15	Portland ..... Jul 22	
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Hackers jump to their own defense

By Sharon Machlis
LAS VEGAS

SELF-DESCRIBED COMPUTER hackers using aliases such as Mudge, Sluggo and Dark Tangent tried to tell corporate systems administrators last week that they mean no harm. But information systems managers who attended a "meet the enemy" session during a security conference called the Black Hat Briefings weren't convinced.

"The hacker by definition is based on natural curiosity," said Sluggo, who has an information security job at a major corporation. True hackers will see how much they can penetrate, but when they get to the point where they would do major damage, they back off, he claimed.

"It's not about what I do; it's more of a mind-set," said Route, who edits the popular hacking journal *Phrack*. "You have a constantly burning desire to learn something new, and when you do, you're damned stoked about it."

The hackers bristled at accusations that tools they develop spawn malicious attacks by teen-agers on the Internet. Panelists said they make their tools available to network administrators, inform vendors of security holes they find and also try to educate the computing community at large.

"We're here talking to you," said Dominique Brezinski, who has studied Windows NT security for three years and gave a presentation on the subject. "We try to help companies tighten up those holes that exist."

"Tools are inherently neither good or evil," Route argued.



JOHN STALEY

Self-proclaimed hackers (from left) Dominique Brezinski, Sluggo, Jeff Moss, Simon Gardner and Chris Goggans bristle at accusations that tools they develop spawn malicious attacks by teen-agers on the Internet

LOADED GUNS?

But some in the audience disagreed. "Those tools are like a loaded gun; it depends who has it and where it's pointed," said one computer specialist who asked not to be identified.

Lester J. Fraim, director of security service at ANS Communications, an America Online, Inc. company in Reston, Va., said hackers "may not be malicious, but there are people who learn from them who are. I think they need to be more socially responsible."

Ira Winkler, a security consultant and author of *Corporate Espionage*, said he considers the "clueless teen-agers" who use hacking tools posted on the Internet as the real enemy of corporate administrators.

While acknowledging that those teens wreak havoc with their tools, the hackers said systems administrators who keep up with the latest bug reports and patches should be able to close holes before Internet surfers find them.

The panelists also cautioned systems administrators that hackers are going to keep on hacking. "NT is going to be a big stomping ground in the next year," said Artimage, who does some work for a computer security group at Purdue University in West Lafayette, Ind. "It's suddenly very sexy to play with."

Hackers may also turn their attention to finding holes in intelligent hubs. "None of the network management protocols are very secure," he said.

A representative from Microsoft Corp. said he was resigned to the ongoing cat and mouse game between hackers and software makers.

"Everybody can do better: They can do a better job breaking in; we can do a better job defending," he said. □

Detection key to prevention

Keeping up with known security holes is one of the best things an administrator can do to thwart hackers, said consultant Ira Winkler at last week's Black Hat Briefings security conference.

Virtually all attacks can be prevented because "they exploit well-known vulnerabilities," Winkler said. Managers can track the latest known software security breaches on the Internet through newsgroups, World Wide Web sites or mailing lists (such as bugtraq at *bugtraq@netspace.org*).

Winkler described audits he has performed where he posed as a company's security head and acquired employee IDs and passwords. In one case, he claimed to work for an executive and got a list of newly hired workers. He then called each one for a bogus "security check" and asked for password data. In another audit, he forged an application for a network smart card and thwarted the authorization security.

"Nobody detected anything," he said. "I think detection is more important than prevention." With prevention, a company may not be sure what mischief has been averted, but detection allows administrators to find security holes and check what damage has been done.

"Maybe you feel better paying consultants to tell you, 'Use what you have,'" he said. "It is the simple, everyday things that get exploited." — Sharon Machlis

McAfee boasts 'net virus protection

By Frank Hayes

PROTECTION FROM Internet-borne viruses is coming into its own.

McAfee Associates, Inc. this week will announce a utility for protecting World Wide Web surfers against hostile Java and ActiveX components.

WebScanX, a $39 utility slated to ship in August, will scan Internet components as they are downloaded to see if they match any of a library of "virus signatures."

HOW IT WORKS

The utility also monitors the components as they run, watching for hostile behavior such as deleting files or grabbing system resources.

Hostile ActiveX and Java components aren't yet a widespread problem. But concerned network administrators are using firewalls and other security tools in efforts to keep their networks safe — often blocking Java and ActiveX entirely, users said.

"Many Internet users are not really aware about the danger on the desktop," said David Kindree, new services development manager at British Columbia Telephone Co. in Burnaby, British Columbia. "And for network managers, it's a catch-22 — people want the functionality, so it's hard to turn off."

The desktop-based WebScanX offers finer-grained examination of Internet components than firewalls can provide, according to Santa Clara, Calif.-based McAfee.

The utility also protects against hostile — or simply buggy — components installed behind the firewall. It protects mobile users as well.

"Right now, unless I'm running a full-blown firewall on my laptop, [firewall protection is] not going to do me a lot of good when I'm on the road," said Richard Perlotto, corporate network security manager at VLSI Technology, Inc. in San Jose, Calif.

Smaller vendors, including Finjan, Inc. in Santa Clara, Calif., and Digitivity, Inc. in Los Altos, Calif., already offer products similar to WebScanX. But the new product should bring the credibility of a major vendor to solving the problem, according to one analyst.

"It mainstreams Java and ActiveX security," said Ira Machefsky, an analyst at Giga Information Group in Santa Clara, Calif. "It's 80% protection against hostile mobile code bundled free in a product you're buying anyway." □

Systems vendors share technology for NT clustering

By Jaikumar Vijayan

SYSTEMS VENDORS continue to exploit a Microsoft Corp. weakness by offering the high-availability Windows NT clustering technology that customers demand.

Starting this week, NCR Corp. will license its LifeKeeper fault-resilient software for Windows NT to other hardware manufacturers and channel partners.

NCR, in Dayton, Ohio, also will launch a program to help independent software vendors build fail-over and recovery capabilities for their NT applications.

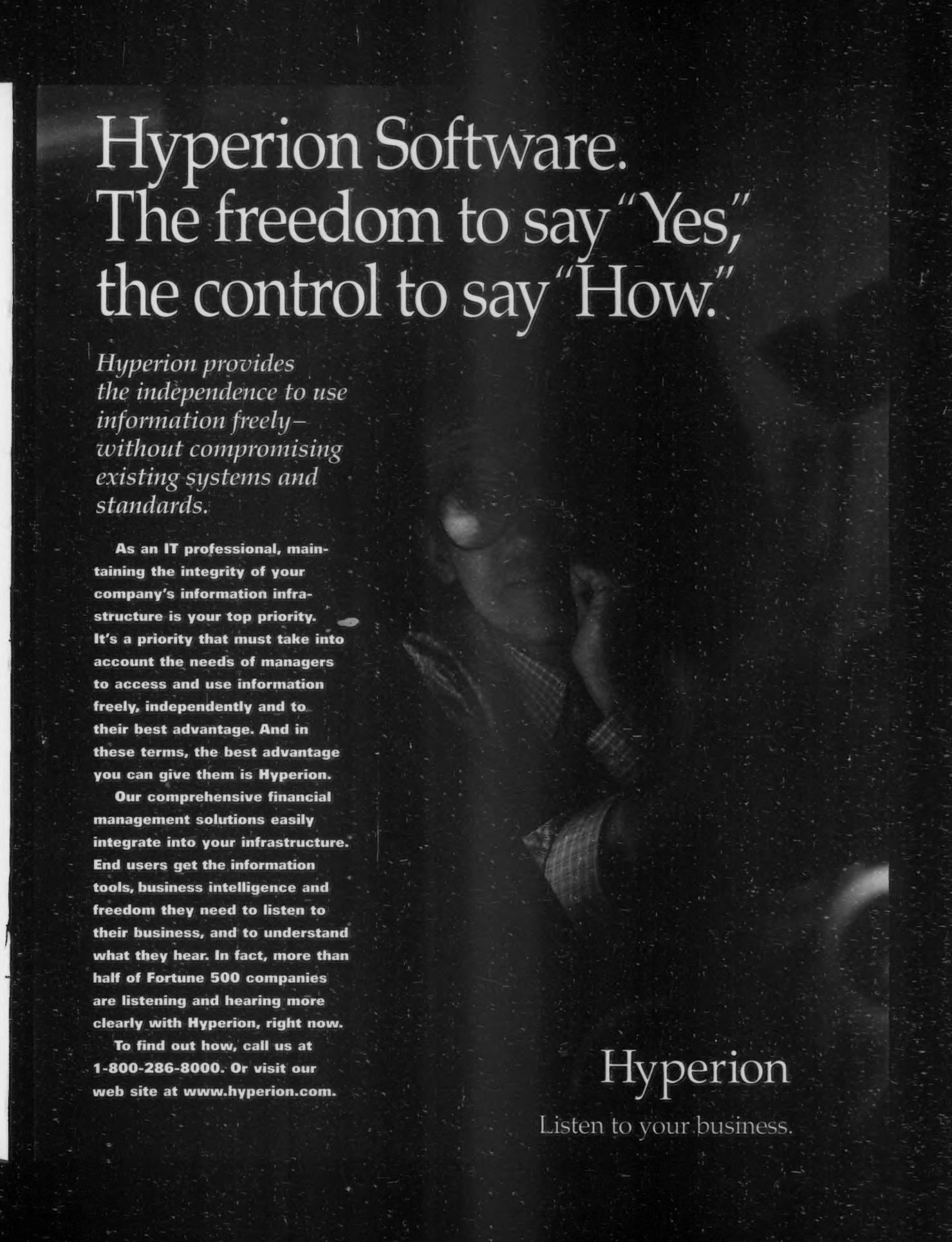
Support for high-availability clustering is crucial for information systems departments that want to transfer mission-critical business applications to Windows NT.

NCR's move follows a similar effort by Tandem Computers, Inc. to license its ServerNet and ServerWare technologies. Both vendors are porting their venerable Unix clustering products to Windows NT and then licensing them.

Digital Equipment Corp. and Data General Corp. offer similar technologies but currently aren't licensing them to others.

The companies are trying to take advantage of Microsoft's delay in delivering some of these capabilities via Wolfpack. Originally scheduled for release earlier this year, Wolfpack is now slated for fall delivery.

"Microsoft still has to prove itself in this market, whereas all these other products have already been tried and tested" in Unix environments, said Bill Murphy, an analyst at The Standish Group International, Inc. in Dennis, Mass. □


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AS/400 vendors reach for NT, Unix

By Tim Ouellette

SOME LONGTIME AS/400 software vendors aren't bleeding exclusively Big Blue anymore.

Instead, to better compete in the tight enterprise resource planning market, they are beginning to develop for Unix and Windows NT server.

"These vendors aren't departing the AS/400, but protecting user investments in the application software as other platforms become an option," said John Logan, an analyst at Aberdeen Group, Inc. in Boston.

For example, J. D. Edwards & Co. in Denver next month will ship the latest update to its OneWorld applications suite, which lets users work on Unix, Windows NT or the mainframe and integrates with the AS/400-only World software suite.

This is a double-edged sword for loyal users of the venerable IBM midrange platform.

On one hand, it may seem to users that their main application vendors — the backbone of the AS/400's integrated technology selling point — are rushing from the AS/400. But at the same time, vendors can use the new revenue to better support existing AS/400 shops and integrate the AS/400 with other platforms.

"I intend to get all our data into relational tables no matter what — be it on Oracle [Unix] or the AS/400," said Douglas Chey, chief information officer at Broderbund Software, Inc., a J. D. Edwards World site in Novato, Calif. "Even though we plan to move to OneWorld in a more client/server environment, it is probable that we will still stay on the AS/400 for a long time."

J. D. Edwards and U.K.-based JBA International Ltd. are also moving ahead to develop their own object technology to help transport data between platforms, even as they take part in IBM's San Francisco project, which focuses on cross-platform object technology, too.

But the companies, each with about 4,000 AS/400 client sites, said their primary focus will remain on the AS/400.

"It's a smart decision on their behalf, so they are not creating a platform-dependent product," said Mike Terlizzi, president of Ballet Makers, Inc.

The Totawa, N.J., dance footwear and clothing company runs JBA's manufacturing software on the AS/400.

But some observers said the focus on other platforms could change dramatically in a few years as Windows NT takes the lion's share of development dollars and revenue (see chart).

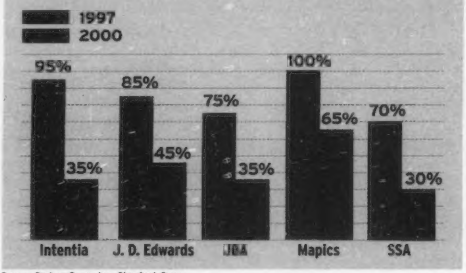
"IBM needs to expand the number of AS/400 third-party developers to attract more new users," said Bruce Bond, a research director at Gartner Group, Inc. in Stamford, Conn.

Two new players that have taken the bait for the AS/400 include SAP AG and PeopleSoft, Inc. [CW, July 7].

But installation has been hampered by scalability problems with SAP's R/3 and a long testing cycle by PeopleSoft. □

MORE THAN JUST AS/400

The estimated percentage of these software vendors' revenues from AS/400 applications will decrease as they focus on Windows NT development



Source: Gartner Group, Inc., Stamford, Conn.

Debate over domain-name registration heats up

▸ *DOJ opens Network Solutions investigation*

By Matt Hamblen

CALL IT www.uproar.arg. The debate over how to register Internet addresses grew noisier and more complicated last week.

Two federal agencies entered the fray, and an international agreement on future Internet domain registration came under vigorous attack.

For corporate webmasters, the moves add more uncertainty to the already messy process of getting and protecting Internet domains.

The U.S. Department of Justice opened an antitrust investigation into the business of registering Internet addresses.

Officials at Network Solutions, Inc. in Herndon, Va., which has a near-monopoly on domain registrations, said it had received a Justice Department request for documents.

Meanwhile, the U.S. Department of Commerce has asked the public to post comments at *www.ntia.doc.gov* — until Aug. 18 — on ways to improve the Internet domain registration process. The National Science Foundation first authorized Network Solutions as the domain registrar in 1993, but that agreement ends in March and won't be renewed.

WHO'S THE BOSS?

The question now is who will subsequently govern the Internet addresses that corporations depend on for electronic mail and World Wide Web commerce.

The now-defunct International Ad Hoc Committee (IAHC) presented an accord in Geneva in April that calls for multiple registrars around the world and seven new top-level domains, including .firm and .store.

But last week, a new group called the Open Internet Congress (OIC) met in Washington to plot against what it called the IAHC "takeover" of the Internet. Critics said the IAHC accord was created by a self-appointed clique that didn't use an open process. Others said seven domain names with unlimited registrars will be confusing and require companies to register multiple names to defend a trademark.

"The IAHC plan is really an amateurish market ploy" by people who want to profit from selling registrations, said Andy Sernovitz, president of the Association for Interactive Media, a nonprofit group in Washington that represents 300 new-media companies. The association convened last week's OIC meeting and will help hold an Internet "constitutional convention" in the fall at Comdex/Fall '97 or Internet World, he said.

One Internet veteran said the IAHC process is more open than critics say. Vinton Cerf, senior vice president of Internet architecture at MCI Communications Corp. in Washington, said, "Anyone is free to sign the [IAHC accord] and participate in discussions of the Policy Oversight Committee."

Cerf said the IAHC plan "needs work" but added that it seems to provide a more open registration process than other alternatives.

Sernovitz said the OIC isn't aligned with Network Solutions, although the registrar's parent company, Science Applications International Corp., is a member of Sernovitz's association.

"We don't think of [Network Solutions] as overwhelmingly evil," he said. □

Government contract?

One Internet commerce consultant doesn't like either the incumbent registrar for Internet domains or an international accord for providing new registrars.

He says the government should do the job.

"I think it makes sense for the government to do registering, just like we register cars and guns," said Jim Sterne, president of Target Marketing, a consultancy in Santa Barbara, Calif.

"There should be a public database served by the public for the public — and why should anybody reap profit for that?" Sterne asked. "It's a critically important function, and it should be a monopoly of government."

Sterne said he isn't pleased with the International Ad Hoc Committee accord calling for seven new domain names and an unlimited number of registrars.

"Seven new domain names is an absolute nightmare," he said. "If I don't register my name under .firm, .com and all the others, I'm guilty of not defending my trademark."

— Matt Hamblen

Bay switch could cut net costs

By Bob Wallace

BAY NETWORKS, INC. users now can save big when connecting switched Ethernet LANs to Asynchronous Transfer Mode (ATM) backbone networks.

Bay's C50N switch can funnel 16 lines of LAN traffic through two on-ramps and onto a high-speed ATM highway. Users who have ATM backbones and are deploying switched Ethernet need those features.

The C50N costs $9,995.

Previously, Bay didn't have a low-end Ethernet workgroup switch that could do that affordably. Users had to use the larger and more expensive C100, which costs about $16,000.

"We use C100s to do this now, but we're seriously looking at the new switch because it can save us money," said Joe DaCosta, director of network management at Human Resources Development Canada in Ottawa. "We have a building that we're rewiring, and I can see considering the C50Ns there."

The C50Ns will let users extend ATM connections from the data center to the workgroup from which huge data streams now emanate. Users also can off-load the conversion of Ethernet frames to ATM cells from data center switches.

"Packing these capabilities into an affordable box will help drive deployment of ATM," said Skip MacAskill, a senior analyst at Gartner Group, Inc. in Stamford, Conn. □



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Apple's parade of CEOs



SETH AFFOUMADO

◀ 1981*-1983

Jobs resigned in 1985, two years after bringing in Sculley as CEO.

**Jobs founded Apple in 1976 and was named CEO in 1981*



◀ 1983-1993

Sculley championed the ill-fated Newton and was booted.



WILLY MATHEISSEN

◀ 1993-1996

Spindler was ousted after he failed to make sales – and couldn't sell Apple to Sun Microsystems.



RICHARD MOSCARITOLO

◀ 1996-1997

Amelio left few surprised when he was forced out by the board. He left for a Lake Tahoe vacation retreat with a $3.5 million severance package.

Challenges facing the next CEO include Apple's return to profitability, regaining market share, forging ahead in research and development and cultivating a favorable public image for the company.

1997-? ▶

?

– Compiled by Mari Keefe

Enough is enough

CONTINUED FROM COVER 1

over the past year, some had already started migrating to Windows. That is more bad news for Apple, which most recently announced plans to focus on its current user base.

"As a manager, I would have no credibility if I went into the folks I answer to and said, 'Let's make a renewed investment in the Mac,'" said Norman Eide, vice president of information systems at HDR Insurance Services LLP in Sacramento, Calif. The company is moving from the Macintosh to a Windows NT platform. "I think they lost it. In the business world, their window is shut," Eide said.

"Slowly but surely, we're moving toward Windows," said Mike Anderson, director of information systems at Sunnyvale, Calif.-based TRW, Inc. TRW's defense contract division uses 1,200 Macintoshes, and thousands of Macintoshes are used throughout the company.

"The group we're in hasn't pushed or endorsed the [Windows] standard yet, but day-to-day pressure pushes us more toward Windows," Anderson said.

"People are losing faith in [Apple]," said another information technology manager and Macintosh stalwart at a large aerospace company. He said his division will phase out more than 10,000 Macintoshes within three years.

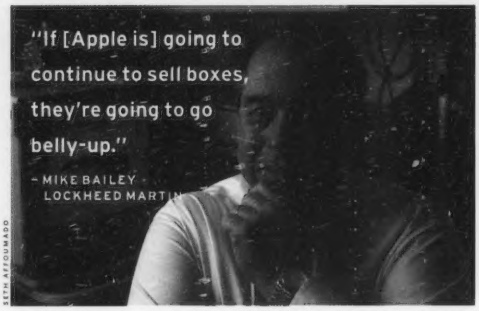
Research from last year shows an increasing number of larger IS departments moving away from Apple, said Eric Lewis, an analyst at International Data Corp. in Framingham, Mass. At larger companies, "Mac is the minority platform, and it tends to lose out," he said.

Still, Joyce Croker, assistant systems editor at the *Los Angeles Times*, said she doubts the Macintosh is going away tomorrow. She said her IS department "is swinging everyone over to Microsoft," but the users who put out the newspaper would fight to keep their 650 Macintoshes because of their reliability and graphic capabilities.

But it is undeniably hard for even Macintosh diehards to avoid disillusion, considering that Amelio, 54, is the third CEO bumped from the company in four years.

Apple's board of directors forced him to resign last Wednesday, citing their dissatisfaction with the company's performance. Also resigning was Ellen Hancock, Apple's executive vice president of technology. She had worked for Amelio at National Semiconductor Corp.

Fred Anderson, chief financial officer at the Cupertino, Calif.-based company, will take over daily operations until a new CEO is hired. That should take three to six months.



SETH AFFOUMADO

JOBS RETURNS

Meanwhile, Apple co-founder Steve Jobs' role will be expanded to "strategic adviser." Jobs, who himself was Apple's CEO, rejoined the company after Apple bought his company, Next Software, Inc., for $425 million last December.

Current plans call for him to oversee product strategy, marketing and sales. Some published reports said Jobs had lobbied for Amelio's departure.

Jobs and Amelio weren't available for comment.

When Amelio was hired, he vowed to return Apple to profitability. But during his tenure, the company's share in the worldwide PC market to dropped to 3%, from 6% early last year. A string of quarterly losses added up to more than $1.6 billion, which triggered massive layoffs and record-low stock prices. The last straw for the board may have been the expected announcement this week of a third-quarter loss of up to $100 million (see chart below).

While Apple struggles to regroup, users said they are worried about the company's future. Some industry observers said Oracle Corp. CEO Larry Ellison could prove to be Apple's savior. In March, Ellison had floated the idea of forming a group of investors to buy Apple to produce network computers.

There are few obvious candidates to succeed Amelio, observers said. Though some questioned why anyone would want the job, analysts noted the potential hefty salary. Amelio received $3 million in salary and cash bonuses last year.

"They need a guy who has a lot better understanding of the consumer electronics market," said Ken Lim, a former Apple marketing manager and editor of "Cyber Media 2001," a newsletter in Cupertino. "Amelio was a semiconductor guy."

A new CEO must "get on a soapbox and proclaim something loud, clear and coherent about who Apple is and make the development community believe it's not wasting its time," said Steve Dube, an analyst at Wasserstein Perella Group. Dube said Apple has until next June to become profitable before its cause is lost.

Sun Microsystems, Inc. CEO Scott McNealy said "the best chance Apple has is to become the easiest and friendliest Java platform provider out there."

Mike Bailey, a systems analyst at Lockheed Martin Missiles & Space in Sunnyvale, Calif., said Apple doesn't have a future unless it completely changes its course. "They're dependent upon hardware sales — not software," he said. Future cloning will only hurt the company more, he said. "If they're going to continue to sell boxes, they're going to go belly-up." □

String of missed opportunities turned off corporate users

Oct. 1991 Apple, IBM and Motorola announce plans for Taligent operating system, Kaleida multimedia systems, Power Open environment and PowerPC chip. All fail to go anywhere, except the PowerPC chip. Although Apple uses the chip, it fails to become an industry standard.

Aug. 1993 Apple ships first Newton handheld device.

Jan. 1995 The company belatedly agrees to license Mac OS to clone makers.

May 1995 Apple shows off first version of Copland, its answer to Windows 95. New operating system slated to ship mid-1996.

Aug. 1995 Microsoft ships Windows 95 and dominates the desktop. Power Computing ships cheaper, faster Mac clone.

April 1996 Apple's Copland delayed until 1997.

May 1996 PowerBook recall. Apple's laptop market share plummets.

Dec. 1996 Apple buys Next Software, says new operating system based on Next technology will ship mid-1998.

May 1997 Apple spins off Newton, which dropped from 23% market share in 1995 to 9% in 1996.

July 1997 Exodus of top Apple talent continues.

Compiled by Mari Keefe

How bad is it?

Stock value
Closing at 13-5/16 Thursday, the company's stock is at a 10-year low, analysts said.

Brain drain
Apple has laid off 4,500 people since January 1996 and gone through four CEOs in 16 years. A steady exodus of executives continues.

PC market share
The number of Apple computers shipped and sold during the second quarter of 1997 dropped 15% from last years' levels, according to Computer Intelligence.

Apple's PC market share has fallen from 6% last year to just 3% this year.

New sales
According to Dataquest, a mere 5% of new computer purchases are Apple computers.

Losses
During Amelio's tenure, Apple's losses totaled more than $1.6 billion. This week it is expected to post a $70 million loss for the second quarter of 1997.

– Compiled by Mari Keefe

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Borland users await turnaround strategy

By Sharon Gaudin

USERS SAY it is time for Borland International, Inc. to show them exactly how the financially troubled company plans to stay afloat.

Borland, a high-end application development tool maker, lately has garnered more publicity for its financial slips and spills than for its cutting-edge products. Users said they will look for signs that the Scotts Valley, Calif., company is turning things around at this week's user conference in Nashville.

Borland's financial troubles

	Revenue	Profit/loss
1993	$464M	-$49.2M
1994	$393.5M	-$69.9M
1995	$254.1M	-$12.2M
1996	$215.2M	-$14.3M

"I'm concerned about Borland's very existence. Most definitely," said John Brush, a senior analyst at the California Department of Mental Health in Atascadero, Calif. "The real hope among the Borland patriots is that it'll be bought out. I think that would be best."

A Borland spokesman said CEO and Chairman Delbert Yocam will outline the company's strategy at the user conference but refused to say what that strategy might include.

STAGE SET FOR COMEBACK

Evan Quinn, an analyst at International Data Corp. in Framingham, Mass., said Borland is positioning itself for one more comeback push. "Yocam has set it up so they can take one good shot at a new Borland," he said.

Quinn noted that the company has a good chance. "They've opened themselves up from just retail to corporate markets. They got $25 million in equity financing. [They] cut down their workforce by 30%. With a Java tool and tools for the AS/400 platform, [Borland is] no longer only Windows-platform aligned. You can begin to see all the pieces of the puzzle," he said.

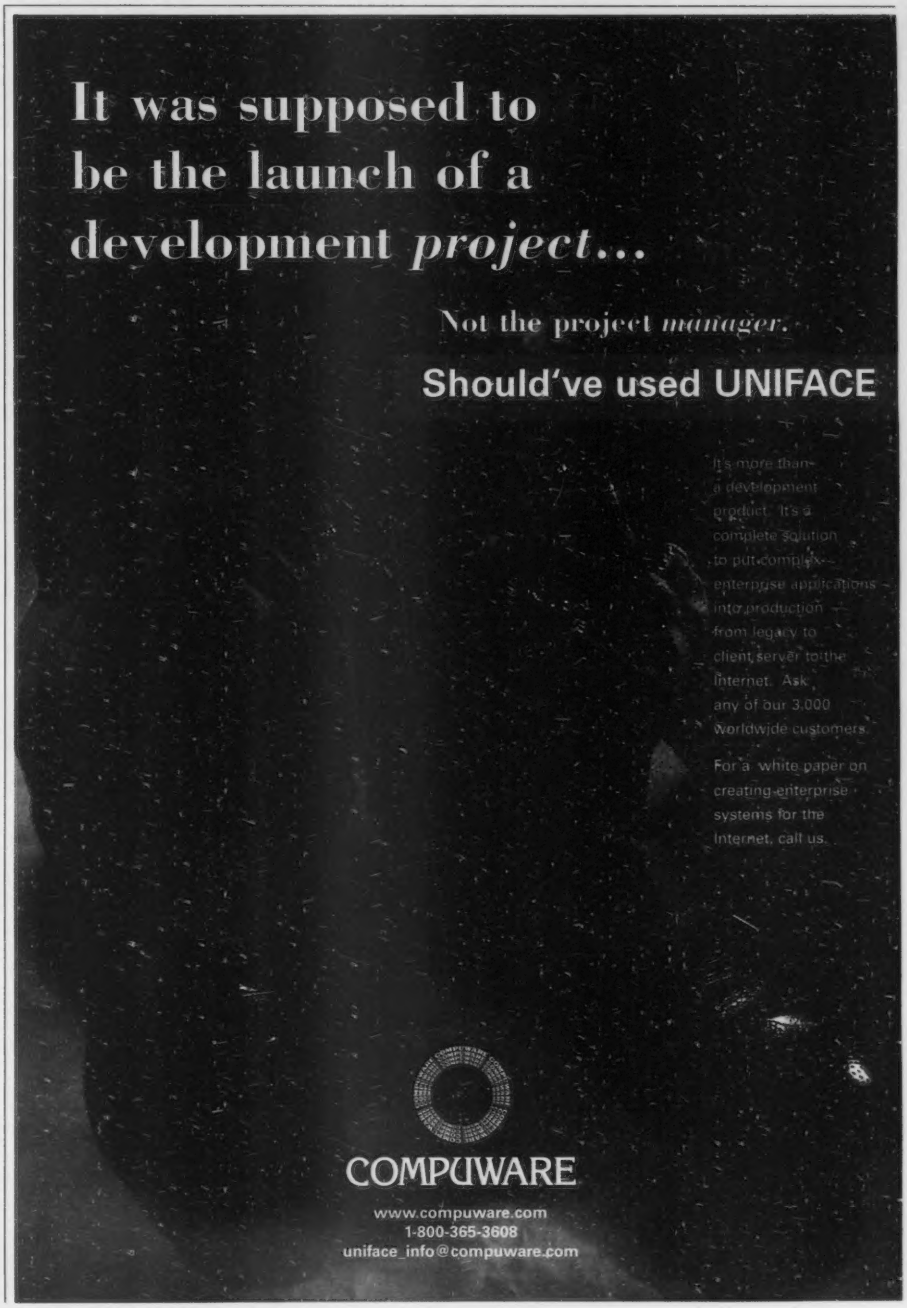
Borland, the maker of the popular Delphi development tool, began having troubles several years ago that eventually led to the ouster of founder Philippe Kahn. Its revenue has been cut in half — from $464 million in 1993 to $215 million last year. Analysts said there are several reasons behind the company's most recent failures. Several noted that Delphi and Borland's C++Builder are very similar to each other, which doesn't give customers much of a choice.

Users and analysts also said Borland is running behind the pack with Java tools. The company is working on J++Builder, a Java tool. Other developers, such as Symantec Corp., Sun Microsystems, Inc. and Microsoft Corp., already have products on the market. Borland's product is still being tested.

Borland also has been criticized for not differentiating its Delphi product from Microsoft's extremely popular Visual Basic.

Tom DiGrazia, a product manager for electronics and software at the Chemelex division of Menlo Park, Calif.-based Raychem Corp., said he has his doubts about Borland's survival but not about Delphi's.

"Actually, I'm not worried all that much," said DiGrazia, who has been using Borland products since 1985. "The Delphi program will be picked up by somebody if Borland fails. Symantec or Novell, [Inc.] or someone will pick it up and act as a parent. Today, it's more powerful than anything I've used in the past." □



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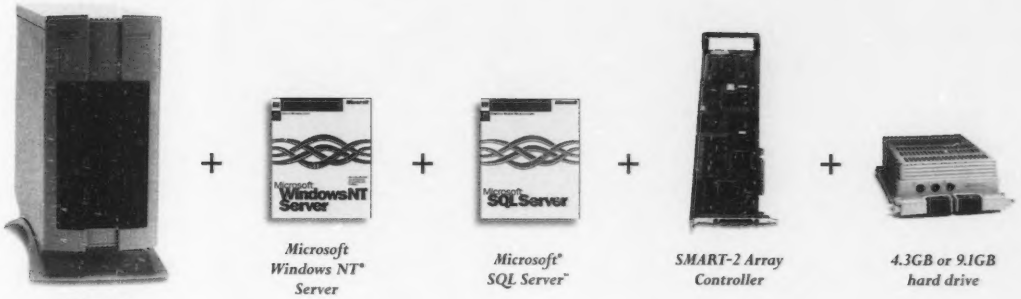
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States expect big savings from data center consolidations

By Patrick Thibodeau

ARMED WITH CONSULTANT studies that promise jackpot-size savings, California and Pennsylvania plan to consolidate their respective data centers.

But they will follow separate paths: Pennsylvania will outsource its operation; California will not.

The California study estimated the state will save $50 million to $85 million over the next decade by consolidating its 12 data centers.

Pennsylvania said it can save up to $127 million over five years by merging 18 data centers.

But the California study, prepared by Deloitte & Touche Consulting Group for the state Department of Information Technology, found no savings benefit from outsourcing the data center operations to a private vendor.

"Government can no longer have these isolated systems," said John Thomas Flynn, California's chief information officer, who spearheaded the project.

The savings in California's consolidation plan will come from reduced costs for hardware and software maintenance and lower personnel costs. The consolidation could affect about one-third of the 2,000 state data center employees, but not necessarily through layoffs.

California needs to hold on to its information technology talent and fill vacant jobs. "We're losing people like mad to Silicon Valley," said Rich Halberg, assistant director of the state Department of Information Technology.

Workers may be reassigned to other jobs, such as the year 2000 problem, Flynn said.

"Government can no longer have these isolated systems."

– John Thomas Flynn, California's CIO

Pennsylvania, however, wants outsourcers to worry about filling jobs. "Do the most up-to-date talent come to the state and stay here?... With the outsourcers, we're always going to make sure," said Tom Paese, Pennsylvania Secretary of Administration in Harrisburg, which oversees state IT operations.

Affected employees said they are nervous. "We've been waiting on pins and needles just to find out what is going to be in the report," said Vic Newquist, the data center director with the State Treasurer's office in Sacramento, Calif. But he said employees aren't worried about a sudden layoff.

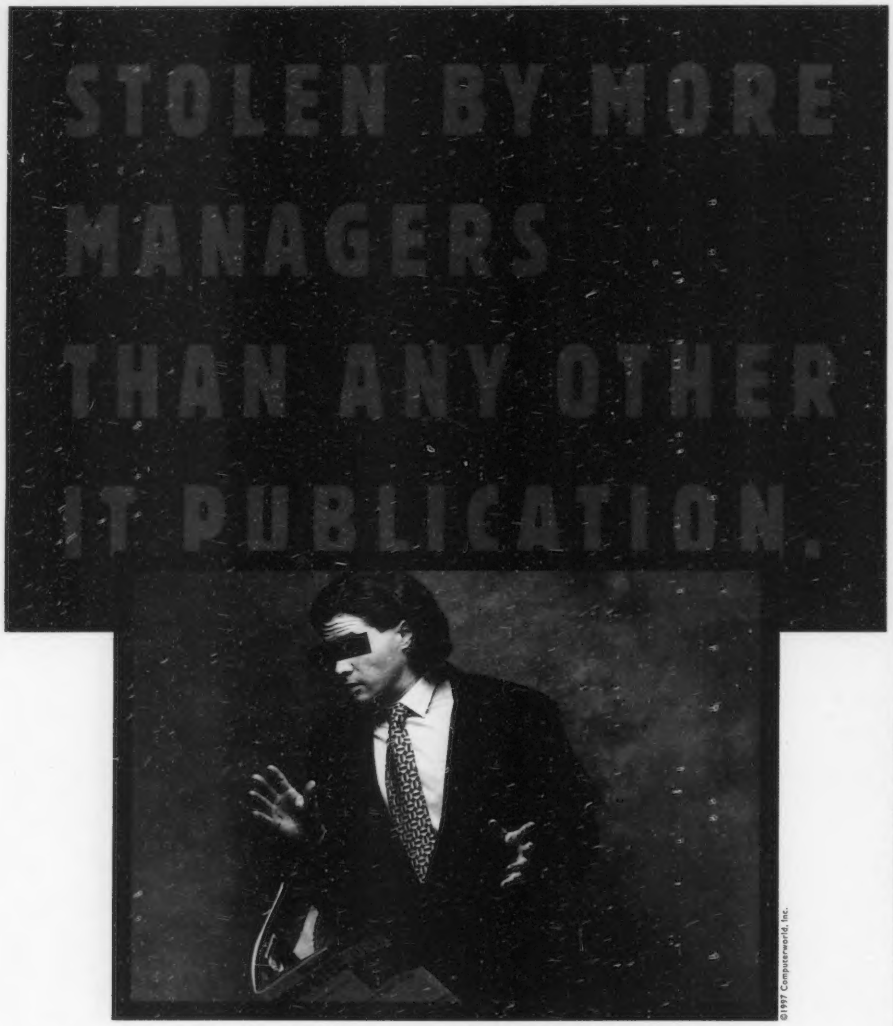
Newquist said it will take three to four years to implement the study's recommended changes. In the meantime, his department, which supports 250 users, has been running ongoing training programs to prepare its staff for changes in their job duties.

Other states that have consolidated data centers have saved money, according to John Kost. As CIO in Michigan, Kost launched a project in 1995 that consolidated 15 data centers into one.

"It was a huge savings, and that was just on the cost of operations buying the computers, keeping the software maintained and the licenses and staffing of it," he said.

The state exceeded its estimated cost savings of $15 million over five years, he said. But the real economies came from a boost in the productivity of staffers who were freed up to do application development.

"I have yet to find a circumstance where consolidation did not make financial sense," said Kost, an analyst at Federal Sources, Inc. in McLean, Va. □



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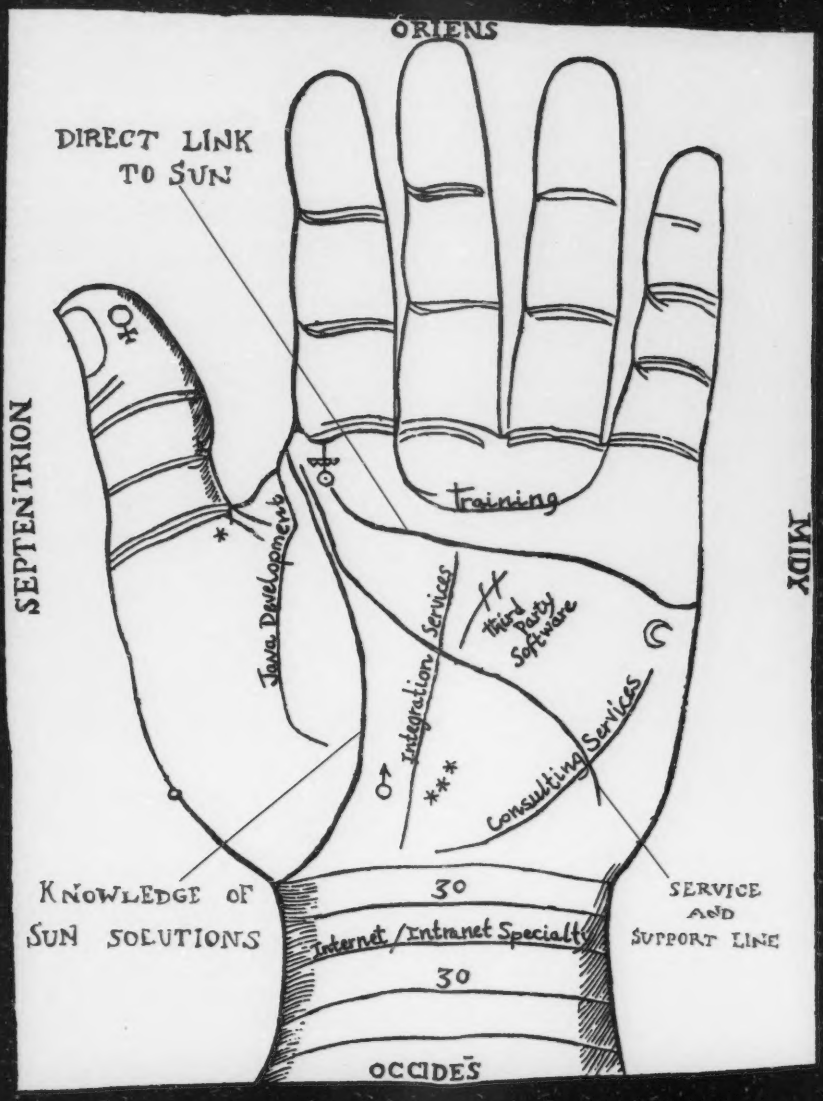
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Users hold off on 56K modem investments

▸ *High costs, lower-than-expected speeds and lack of standards have been cited*

By Kim Girard and Mindy Blodgett

ALAN JARASHOW, project manager for remote communications at Nabisco, Inc. in Parsippany, N.J., did his homework on 56K bit/sec. modems.

He discovered it would cost $100,000 to invest in modem pools necessary to upgrade to 56K bit/sec. And up to 20% of his 4,000 remote users are in rural areas where they would have a "one-in-a-billion chance" of really getting data at 56K bit/sec., despite the investment.

Faced with those cost and performance problems, Jarashow and other corporate network managers shy away from adopting 56K bit/sec. modems, analysts said.

But some Internet service providers have forged ahead anyway. America Online, Inc. in Vienna, Va., said it will support 56K bit/sec. modems in 120 cities by Aug. 31.

And Netcom On-Line Communication Services, Inc. in San Jose, Calif., supports the speed in 40 cities.

TESTING 1, 2, 3

How to tell if a phone line can support 56K bit/sec.

1. Hook up a V.34 modem
2. Go into a terminal window
3. Dial (888) 877-9248
4. Type in Line Test
5. Wait for report

But many other Internet service providers are waiting for a standard to be hammered out before they invest in new switches, which can cost $100,000 to $300,000 apiece.

"56K bit is a marketing bullet point rather than a reality for many users," said Dan Taylor, a senior analyst at Aberdeen Group, Inc. in Boston.

NOT UP TO SPEED

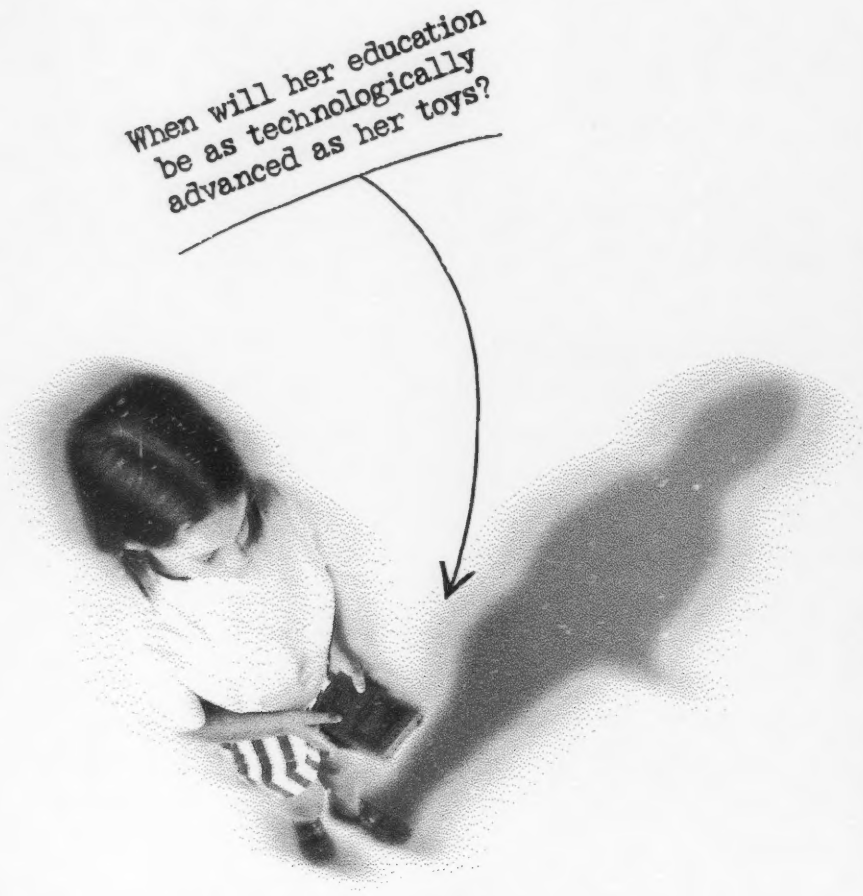
One big reason is that 56K bit/sec. modems don't deliver their promised speeds because of the spotty quality of local telephone lines, according to Dan Merriman, a vice president at Giga Information Group, a Cambridge, Mass.-based consultancy.

He said there are very few mobile users or telecommuters who use 56K bit/sec. modems. Those who do report speeds "in the mid-40s," Merriman said.

Corporate managers are asking, "Do I want to make this investment and find it doesn't really work because of the quality of the lines?" Merriman said.

That's a worry shared by Sheryl Olguin, lead software engineer at Harris Corp. in Palm Bay, Fla.

"We've been following it, but right now we just don't think the phone lines are good enough to get true 56K technology," Olguin said. "I think eventually it will be cost-effective technology, but we are waiting it out." □

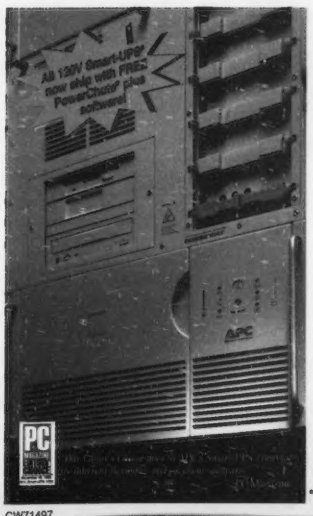


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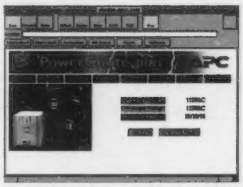


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High tech fuels NASA mission on Earth, Mars

Millions drop in on Pathfinder site

By Mitch Wagner

MORE THAN 4 million people each day last week left planet Earth to visit Mars.

They took a shortcut, of course, via one of the most popular sites in the history of the World Wide Web. The NASA-run site displays pictures and information from the unmanned probe Pathfinder.

The Web site, at *mpfwww.jpl.nasa.gov*, saw 220 million hits, or 22 million individual visits, between Pathfinder's landing on Mars at 10 a.m. July 4 and last Tuesday afternoon. The enormously high traffic left NASA straining to meet the Web demand, said Dave Dubov, Mars Pathfinder webmaster at NASA's Jet Propulsion Laboratory in Pasadena, Calif.

NASA handled the demand in part by using a big-bandwidth Internet connection. The agency has a 45M bit/sec. T3 connection to the Internet, an order of magnitude larger than Internet connections that serve entire corporate campuses. NASA is also handling the strain by using high-powered servers loaned by Silicon Graphics, Inc. The servers are backed by more than 20 mirror sites around the world that carry copies of the site, Dubov said.

"Our goal was to provide a virtual presence on Mars to let the public join us here and see the beautiful images and be able to see what the engineers were seeing," Dubov said.

The Pathfinder site offers an archive of Mars images, live Internet video feed from NASA's cable television station and a virtual reality mock-up of the Mars landing site written in Virtual Reality Modeling Language.

The Pathfinder site is the latest to encounter brief but huge popularity in conjunction with headline-making news.

When the Heaven's Gate cult committed mass suicide earlier this year, 'net-heads worldwide flooded servers with requests to log in to the cult's site; the group worked as Internet consultants.

IBM last year posted results from the Summer Olympics on the Web, but systems errors prevented journalists from logging in to the site to pick up results. □



The Mars rover Sojourner, after leaving Pathfinder's ramp, approaches the rock known as Barnacle Bill (left)

& **NASA uses Java applet to convey Pathfinder photos from Mars. Page 53**

IBM RS/6000 guides spacecraft

By Tim Ouellette

BIG BLUE has landed on the Red Planet.

In the latest example highlighting the box's high-end capabilities, an altered version of IBM's RS/6000 processor is running the show aboard Pathfinder, NASA's lander currently exploring Mars.

The inclusion of the RS/6000 in a deep space project is evidence that NASA is serious about cutting costs and speeding up projects to explore other planets.

Deep space missions typically take 10 to 12 years to arrange and billions of dollars to put together. But the Pathfinder project went from concept to launch in three years — at a relatively paltry cost of $170 million.

The only customization required was altering the RS/6000 to protect the specially designed RAD 6000 from massive space radiation. Lockheed Martin Federal Systems in Manassas, Va., developed the RAD 6000.

"A major part of cutting down the project time line was the use of commercial technology. With the choice of the RAD 6000, we were able to work with the operating systems and software immediately," said Lloyd Keith, the engineer in charge of procuring Pathfinder's flight computer and operating system at NASA's Jet Propulsion Laboratory in Pasadena, Calif.

In the past, the space agency designed a spacecraft's computer from the ground up, including the hardware, operating system and mission applications. With a commercial processor, the lab was able to immediately begin programming using Wind River System's, Inc.'s VXWorks real-time operating system.

22 MIPS AND RUGGED

The RAD 6000 has been in control of Pathfinder since Dec. 4, when the launch device separated from the spacecraft.

The RAD 6000 is the size and thickness of a pad of paper but can run at 22 MIPS. It must withstand radiation and temperature variations from minus 55 C to 70 C, along with the side effects generated by the vacuum of space.

"We have to prepare for an environment that is incredibly nasty. In space, you can't just blow air across a processor when it gets hot like in a PC," Keith said. □

IS weighs separate network for diagnosis, repair

By Patrick Dryden

CLIENT/SERVER networks have become so vital to business that some information systems managers want a separate network just for monitoring performance and fixing problems.

IS managers are under the gun to maintain service levels for users, but constantly gathering statistics can slow response times across the production network. And managers crave a back door to reach critical devices if the main link fails.

NETWORK MONITORING

Drawbacks to such an approach include added cost and complexity, but some IS managers and consultants recommend working with a safety net.

"If all my management traffic runs over the main network and it goes down, then I can't diagnose the failure," said Bryan Bates, a senior analyst at SupportNet Consulting, Inc. in Calgary, Alberta.

The "outside network" Bates built for the campus of a Canadian energy company connects servers and major internetworking devices. It lets operators "reach out and touch a failed component from another side," he said. The network also off-loads all the data-gathering activity of several monitoring tools, which lessens the impact on business traffic, he said.

Ernst & Young LLP is starting to recommend separate management networks so its clients can free bandwidth on the primary network and retain contact with critical devices, said John Parkinson, the consultancy's director of emerging technologies research. "If you want a lot of instrumentation, and you plan to actively manage performance, then that's the way to go," Parkinson said.

Also, a secondary link to far-flung routers, for example, often will come in handy. "If you can't get to that router across the network, you must call someone to go punch its buttons," Parkinson said. "That's a real problem with the lack of support in remote sites, especially for organizations spanning the globe."

At Stanford University, network planners are moving to external collection of management data to remove that traffic from the backbone, according to Jay Kohn, networking production manager at the campus in Stanford, Calif. "We want the freedom to do more experimentation, testing and other activities without affecting the primary infrastructure," she said.

Managers of telephone and wide-area networks typically duplicate connections for emergency purposes. But the load from management traffic doesn't worry too many IS managers right now. They said management traffic can be minimized by judiciously determining what most needs to be measured and how often.

"If you configure your tools properly, traffic won't be a problem," said Richard Weiss, architect of enterprise management systems at Charles Schwab & Co. in San Francisco. Building a second network for management purposes would be too costly, he said.

And it would add another layer of complexity, said David Brown, director of network services at *The New York Times*.

Brown said he can reduce management traffic by decreasing the polling interval for monitoring tools and adopting smarter probes that can summarize statistics on their own.

Eli Lilly and Co. is considering an outside management network to monitor concentrated points carrying lots of switched traffic, said Tom Reinsel, telecommunications analyst at Lilly in Indianapolis. □

THE ONGOING DEBATE

IS managers look at the benefit of a separate network to link servers and critical internetwork devices for management functions

Pros

- Provides emergency access to remote gear
- Removes monitoring traffic from business network
- Serves as a backup path for user traffic

Cons

- Adds cost to current infrastructure
- Increases complexity of networks
- Weakens security



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Briefs

3Com to cut 800 jobs

3Com Corp. last week said it will lay off about 800 employees, or 4% of its workforce, during the next year as a result of its merger with U.S. Robotics. 3Com said it will cut overlapping positions, primarily in the corporate arena. The $8.5 billion merger was completed June 12.

Higher profits at Yahoo

Yahoo, Inc. last week reported better-than-expected second-quarter profits, helped by growth in traffic on its World Wide Web site. The Santa Clara, Calif.-based company reported a profit of $610,000, or 2 cents per share, compared with a loss of $1.4 million, or 5 cents per share, in the same period last year. Revenue more than quadrupled to $13.5 million from $3.3 million in the same period last year.

Intel denies charges

Intel Corp. last week officially denied it had infringed any of Digital Equipment Corp.'s patents in the chip maker's first legal response to Digital's May 12 lawsuit. Filing in federal court in Worcester, Mass., Intel said Digital's patents weren't valid and asked the court to dismiss the case and force Digital to pay Intel's legal costs.

SAP predicts profits

SAP AG last week said it expects healthy second-quarter profits and sales when financial results are released July 24. The company said strong demand for its integrated business software and favorable exchange rates will let it repeat its first-quarter performance. But SAP also said growth rates in the following quarters are expected to slow down.

GE picks Novadigm

To manage software on its customers' PCs, GE Capital IT Solutions selected tools from Novadigm, Inc. in Mahwah, N.J. Novadigm's Enterprise Desktop Manager automates the deployment, configuration and maintenance of applications throughout large networks.

AEA sues former CFO over missing money

▸ *Group goes public after repayment plan fails*

By Matt Hamblen

THE AMERICAN Electronics Association (AEA) in Santa Clara, Calif., had hoped to take the quiet route to get its fired chief financial officer to pay back $807,000 the association believes he embezzled over 12 years.

But when William Phillips Jr. failed to meet an agreed-upon June 30 deadline to repay the money, the AEA went public and filed a civil suit that seeks full restitution.

Last week's publicity from the lawsuit, filed July 3 in Santa Clara County Superior Court, prompted an official at the county district attorney's office to consider criminal charges.

"We're getting preliminary information about the case, but it's still very early," said Santa Clara County Deputy District Attorney Mark Hames, head of the economic crimes group.

Phillips, 54, who lives in Milpitas, Calif., couldn't be reached for comment.

In an arrangement with the AEA, Phillips agreed to pay the $807,000, but he admitted no wrongdoing. His attorney, Stacy Shelton, said she had read the nine-page lawsuit against Phillips, but she wouldn't comment or discuss Phillips' whereabouts. Phillips has up to 60 days to present an official response to the civil case.

The AEA filed the lawsuit after Phillips paid $250,000 to the group but missed the deadline for the balance, AEA Chairman George Sollman said.

Phillips was fired in March from his $144,000-per-year job after the AEA said it discovered he was making payments to a dummy information systems consulting organization that Phillips created called The Solutions Group. All the checks, written about once per month for 12 years, were below the thresholds of $7,500 — and, later, $5,000 — required for a second authorizing signature, AEA officials said.

"I definitely feel I was buffaloed by Bill. He figured out our system and used it on us."
– George Sollman, American Electronics Association

Sollman, a board member for six years, said there has been some board hand-wringing over the incident. "I definitely feel I was buffaloed by Bill," Sollman said of Phillips. "He figured out our system and used it on us."

Sollman and AEA President William Archey, who arrived in 1995, said they instituted strong measures to prevent future embezzlement, including lowering the amount of a check that can be written by one person from $7,500 to $5,000 in 1995 and, in March, to $750.

Archey said the affair has detracted from last year's accomplishments by the AEA in pushing for tax legislation favorable to computer companies. The AEA's prime mission is to lobby state and federal officials on behalf of its 3,000 members, including the largest software and hardware makers.

The main lessons for other organizations to avoid insider theft, Sollman and Archey said, are to institute strict financial controls, especially on IS consultants, and find ways to hire honest people. □

Oracle charges into the middle-market battlefield

By Randy Weston

MIDDLE-MARKET companies are shaping up as the new battleground in the packaged application wars.

In the rush to sign up customers, vendors are busily rolling out programs to attract the previously ignored market segment. With the programs, vendors promise quick, inexpensive and relatively painless migrations to their products.

Judith Hurwitz, president of Hurwitz Group, Inc. in Newton, Mass., said those types of programs are essential for the middle market, which until recently had all but been ignored by SAP AG and Oracle Corp. as the vendors concentrated on Fortune 500 installations. Many smaller companies were handed off to third-party sales channels and consultants.

"The key difference between [midsize] companies and Fortune 500 companies is the [middle-tier firms] don't have the [information technology] staff to do the installations themselves, and they don't have the luxury of time," Hurwitz said.

ORACLE FASTFORWARD

Module	Price	Availability
For 20 concurrent users		
Financials	$450,000	3 months
Enterprise Resource Planning*	$950,000	6 months
For 40 concurrent users		
Financials	$650,000	4 months
Enterprise Resource Planning*	$1.15M	7 months
For 60 concurrent users		
Financials	$850,000	5 months
Enterprise Resource Planning*	$1.35M	8 months

*Financial and manufacturing modules

With these programs, the vendors do most of the work, and they can do it in short time periods — from three months to eight months, depending on the size of the organization (see chart).

RISK REMOVED

More importantly, much of the risk is removed for the user company because customization and massive re-engineering aren't part of the equation.

"The margin of error is very slim for these [smaller] companies," Hurwitz said. "In these midsize companies, there is no work-around — either you do it right or you go out of business."

Heavyweight Oracle is the latest to take the plunge. The Redwood Shores, Calif.-based company last week announced FastForward, a program that targets companies in the $50 million to $500 million range. It includes a core set of Oracle applications preconfigured for basic business functions, a predefined implementation plan, an Oracle Universal Database Server, support and training.

FastForward is Oracle's answer to chief rival SAP's year-old ASAP program, which touts quick-and-easy implementation of SAP's R/3 system.

FastForward was designed for companies that want a quick migration to client/server with key business functions already configured to their business practices and that can postpone adding any other functionality or customizing the software until after the initial installation, Oracle officials said.

It also is limited to companies with no more than 100 users on a system located in a single organizational unit that uses one currency and one language. In other words, multinational companies in a highly distributed environment need not apply.

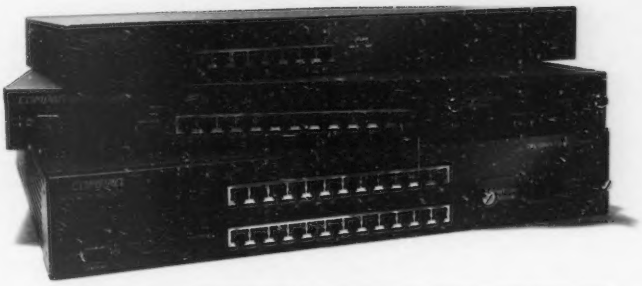
Core applications in the program include procurement, invoice payment and asset accounting on the financial side, and cost accounting, forecasting and order fulfillment for the manufacturing module.

Oracle is testing the program and plans a general launch by year's end. □

How Did We Become A Leader In Fast Ethernet Hub Technology In Just A Year?

a) Engineering Genius
b) Superior Products c) Caffeine
d) All Of The Above

The answer, you might have guessed, is "d." Compaq is pioneering Fast Ethernet technology and making mass migration from Ethernet to Fast Ethernet simply effortless with a number of industry firsts. With the first dual speed 10/100 hub, you can forget about all those costly trips to the wiring closet. And the first segmentable, stackable 100 Base-T hub nestles comfortably into your current network and delivers drop-in Fast Ethernet access to your server. Now you can overcome cable distance limitations with the only standard-based solution, Smart Uplink. Ultimately, with Compaq Netelligent, you'll benefit from the broadest range of products that are reliable, affordable and offer the greatest price:performance. To learn more, visit us at www.compaq.com or call 1-800-544-5255.



The Compaq Netelligent family of hubs:
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OPINION

Mainframe deja vu Our industry needs a 12-step program to get over its

fear of old — no, make that "legacy" — technology. Witness the so-called return of the mainframe.

If that weren't so ludicrous, it would be funny. Where did it go? Admittedly, for a while there it was politically incorrect to admit to owning a mainframe, much less running your — gasp! — business-critical applications on one. But at many of the world's major corporations, that has always been true.

Corporate America never replaced its mainframes with networks of PCs. The reason? You can't replace an ox with 10,000 chickens, as Gartner Group analyst Jim Cassell observed some years ago. Even today, there is little that matches a mainframe's throughput and horsepower when it comes to handling massive amounts of data while maintaining centralized control over corporate assets.



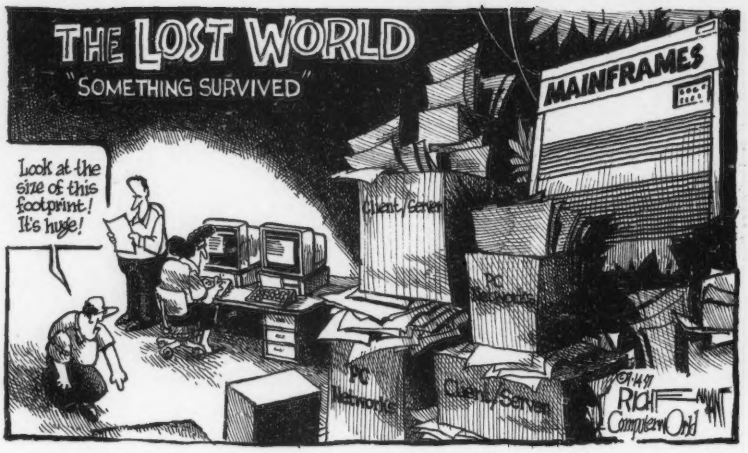
Of course, client/server, Java, the Internet and other newer technologies all have their place in the grand scheme of things. But mainframe applications are evolving into newer, more interactive and dynamic systems. That is very different from the thinking five years ago, which was to replace big iron completely with snappy client/server systems.

Consider these words from top MCI technologist John Gerdelman, president of NetworkMCI Services. "This whole place runs" on Cobol-based mainframe systems, he says. "I'm trying to convince all my people . . . to evolve those established systems, because then we can get to market faster. Scalability is everything."

Perhaps it's the mark of our throwaway society to think that anything new will simply annihilate the old. Yet take a look at Cobol programmers who were called dinosaurs and worse only a few years ago. They are having the last laugh now as corporations scramble to pay them big bucks to help resolve the year 2000 crisis. Who better to empathize with the next executive who stands up and says, "I'm from a Fortune 100 company, and I have a mainframe."

Johanna Ambrosio

Johanna Ambrosio, *Online editor*
Internet: *johanna_ambrosio@cw.com*



LETTERS

Junk E-mail is annoying, but should it be illegal?



I AGREE COMPLETELY with news editor Patricia Keefe's tirade on spam ["Return to sender," CW, May 26]. I don't see why I have to wade through garbage to find out how to remove my name from someone's mailing list, which never works anyway. I forward it back to them and post that E-mail address on a page that can be harvested by those MailBot collectors. Hopefully, spammers spamming one another will cause their systems to crash and burn.

Ralph Hightower
Chapin, S.C.

I FIND IT interesting that news editor Patricia Keefe urges readers to support an initiative to add spamming to the fax law, yet when it comes to passing laws to control hard-core pornography on the 'net, it's a free-speech issue. As she put it in her editorial: Cut the crap.

Douglas Pusateri
Phoenix

Development tools are no substitutes for good planning

WHOA! In your May 26 issue, a Fortune 500 manager is quoted as saying "Today's apps can be developed so rapidly that you can have one running before the project plan to do it the old way could be written" ["Technically challenged?"].

I'm glad you didn't publish which Fortune 500 company, because that kind of attitude should cause its stock to drop precipitously. Anyone who thinks that today's development tools — which, generally speaking, do allow a program to be up and running more quickly — are substitutes for planning and good systems design does not belong in management in any size company.

Conrad Stegner
Richmond, Va.

Do Microsoft product reviews correlate with ad dollars?

I HAVE NOTICED a disturbing trend developing in *Computerworld*'s product reviews. You consistently grade Microsoft as one of the best software publishers regardless of whether the reviews are of browsers, spreadsheet programs, E-mail software or word processors. I'm not saying Microsoft doesn't make quality products, but I wonder how impartial the judges are. In the June 9 issue, I noticed Microsoft ran seven two-page ads and one three-page ad. Is it just me, or is your opinion of product quality in direct correlation with ad dollars spent?

I wonder how impartial the judges are.

Ron Hull
Whittier, Calif.
rbhull@themall.net

Successful online companies

I AGREE WITH Editor Paul Gillin's May 21 Upfront column ["Online reality"] that not all Internet enterprises will succeed. But I submit that certain types of businesses could exist only on the Internet — and those businesses seem to be thriving.

Two such companies that spring to mind are at *www.bibliofind.com* and *www.onsale.com*.

Bibliofind is a repository for used books. It allows hundreds, maybe thousands, of booksellers worldwide to pool their inventories into a single database. Customers can select the best deal among the many offerings that turn up.

Onsale is an online auction that lets customers bid on reconditioned and closed-out computer and electronics merchandise. The current winning bids for any particular auction lot are visible for all to see and bid against. Those on the list when the auction closes get the merchandise. I am spending more of my money online. For certain types of purchases, there is simply no alternative.

Don Staricka
Los Angeles
don@datadepot.com

Computerworld welcomes comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Maryfran Johnson, Executive Editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax number: (508) 875-8931; Internet: letters@cw.com. Please include an address and phone number for verification.

Congress may make staffing decisions easier

Steven Lipson and Harvey Shulman

The shortage of highly skilled computer professionals can create project delays, high labor costs and general frustration for IS managers.

Now Congress is considering legislation that could make staffing decisions easier by clarifying the definition of an "independent contractor" and making the workforce more flexible.





Are you an IS manager on a tight budget and short deadline, whose in-house employees are on other assignments or lack the expertise? Have you called a staffing firm and received resumes of consultants who have the right skill sets, are immediately available and will work within the billing rate? Did your excitement wane when you learned they will work only as independent contractors paid by the staffing firm and not as employees?

It's easier to staff hair salons with contractors than to staff high-tech projects.

Many IS managers must receive "special permission" from higher-ups in their legal, procurement and human resources departments before they can accept independent contractors. Lawyers and CPAs for the staffing firms and/or independent contractors also may get involved. In those situations, many IS managers, staffing firms or contractors just walk away. Everyone loses.

The root of the independent contractor problem is an unpredictable, 20-factor "common law" employment test that originated in medieval England but is used today by the IRS to distinguish independent contractors from employees.

Because the test isn't conclusive, even if contractors pay their taxes in full, the IRS could reclassify them as employees of the firm that pays them and collect the same taxes from that firm. Many staffing firms want to avoid a confrontation with the IRS and often reject independent contractors even if they are the best technical candidates.

The problem is particularly serious for high-tech professionals. Incredibly — acting under a now-disproven assumption that high-tech workers have higher tax non-compliance rates than workers in other industries — Congress added a section to the 1986 Tax Reform Act that makes it especially tough for computer professionals to work as independent contractors through staffing firms.

To prevent IRS reclassifications, other workers have a back-up position: If they can show evidence or a court opinion demonstrating it's the practice of their industry to hire independent contractors, they can work anywhere without having to pass a test. But Section 1706 removed high-tech workers from that safe haven. As a result, it's easier to staff construction projects or hair salons with independent contractors than it is to staff high-tech projects.

The House has passed a tax/budget bill that offers a more flexible definition of "independent contractor" — known as the "Christensen definition" — that effectively nullifies Section 1706. But even though many senators and more than a dozen major high-tech associations have urged the repeal of Section 1706, the Senate's tax/budget bill has no independent contractor provisions.

A House/Senate conference committee this month will merge both bills, and the Christensen definition or a compromise may emerge. The compromise may come from Senate bill S.460, which repeals Section 1706 and requires the IRS to recognize the validity of incorporated independent contractors.

IS managers are trying to meet their staffing needs. Workers want tax credits for continued training. And more foreign professionals are being hired because our laws make such hiring easier than using homegrown independent contractors. Isn't it time to ask Congress to do something about it?□

Lipson is president of the National Association of Computer Consultant Businesses. Shulman is general counsel for the group.

Go for the big bang, but not too often

Michael Schrage

Let's say you're, oh, 45 pounds overweight. You know you're not really healthy; you're sick of dragging yourself around and tired of trying to squeeze into things that no longer fit. You decide it's time for a major change. Money isn't the top issue. So what choice would make the most sense for you?

Would you a) opt for the significant but gradual lifestyle adjustment of eating less and exercising more? Or b) go the liposuction route of an ultrasound-tipped canula vacuuming the fat out of you? And don't forget you have to wear those tight rubber pants for weeks afterward.

The analogy isn't perfect, but the psychology surrounding it is. Your choice reveals a vital something about your management style and priorities. Diet or surgery? Evolution or revolution?

Most IS organizations find themselves caught in comparable debates about whether they should take a "big bang" approach to a systems switchover or whether the gradual, incremental approach is best. Yes, the choice is frequently out of the hands of IS. But this is one of those debates in which both sides can make valid, cost-effective and culturally pertinent cases for their positions.

But after chatting with a few systems integrators and CIOs, I'm firmly convinced that the big bang is the way most IS organizations should go. The reasons? Politics and pragmatism.

These are times when managing events is seen as every bit as important as managing processes. The visibility — and associated risks — of a hard deadline and the reality that the organization will be a different place come a certain date focuses the corporate culture in a way that subtle changes over time simply can't. It's Machiavelli redux: Make no small plans — big bangs bespeak boldness. They command and demand attention. And, let's face it, attention is one of the most valuable commodities in an organization today.

To be sure, you want the right kind of attention. To perform a radical systems switchover in such a way that people can hardly tell what happened may be virtuoso technology management, but it also can be an act of self-destructive organizational stupidity. A CIO who doesn't do a decent job commanding his enterprise's "attention economy" spends the bulk of his time on outsourcing.

Not coincidentally, does anybody anywhere in America know of a successful outsourcer/systems integrator who doesn't believe in the virtues of big bangs? Do you think SAP, Andersen Consulting and EDS rose to global prominence by preaching and practicing the gradualist gospel for their clients? These folks talk transformation, not incrementalism. Experience has taught them that the shock of the new is a better business model than a warm bath of familiarity.



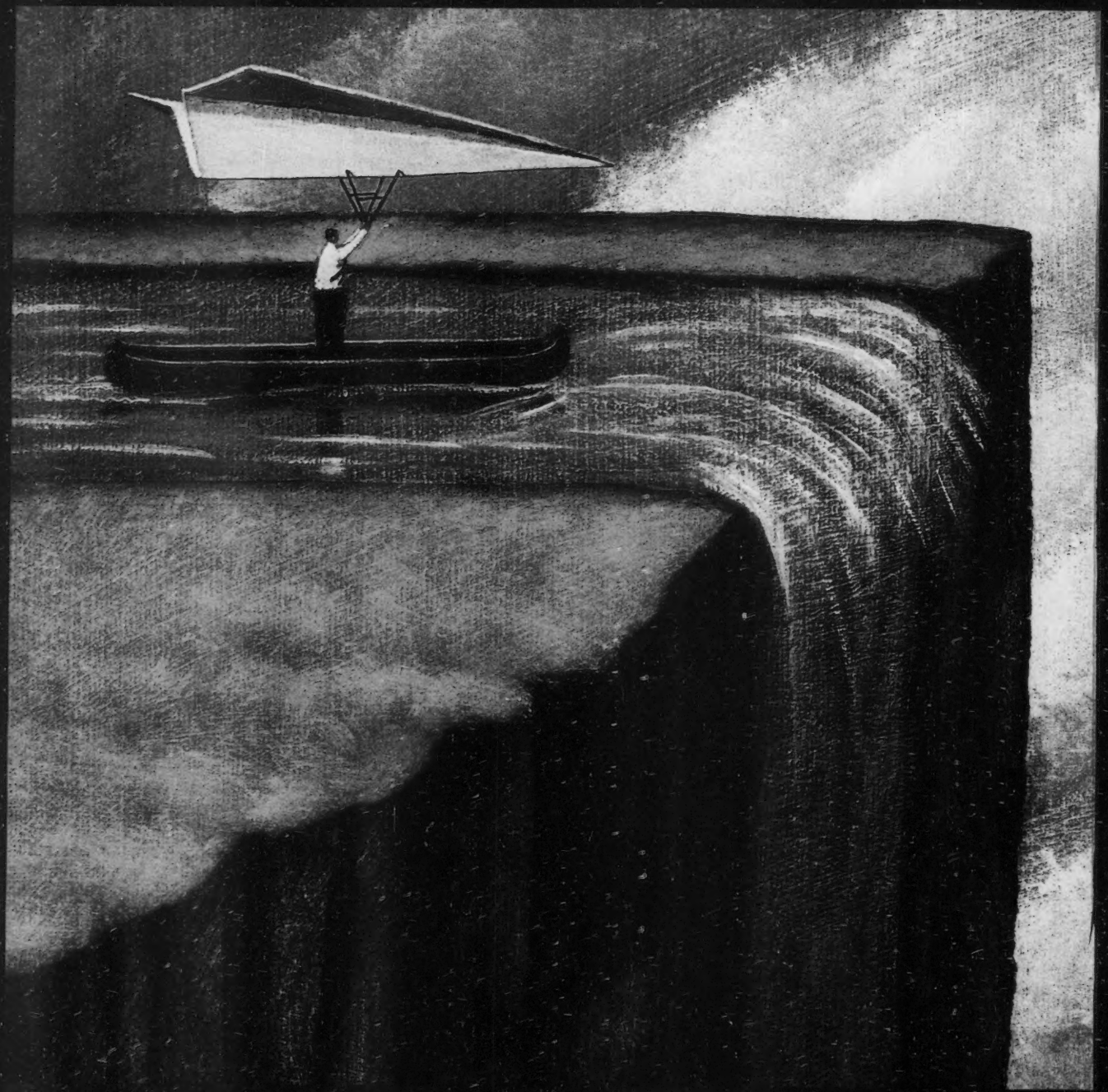
Make no small plans; big bangs bespeak boldness.

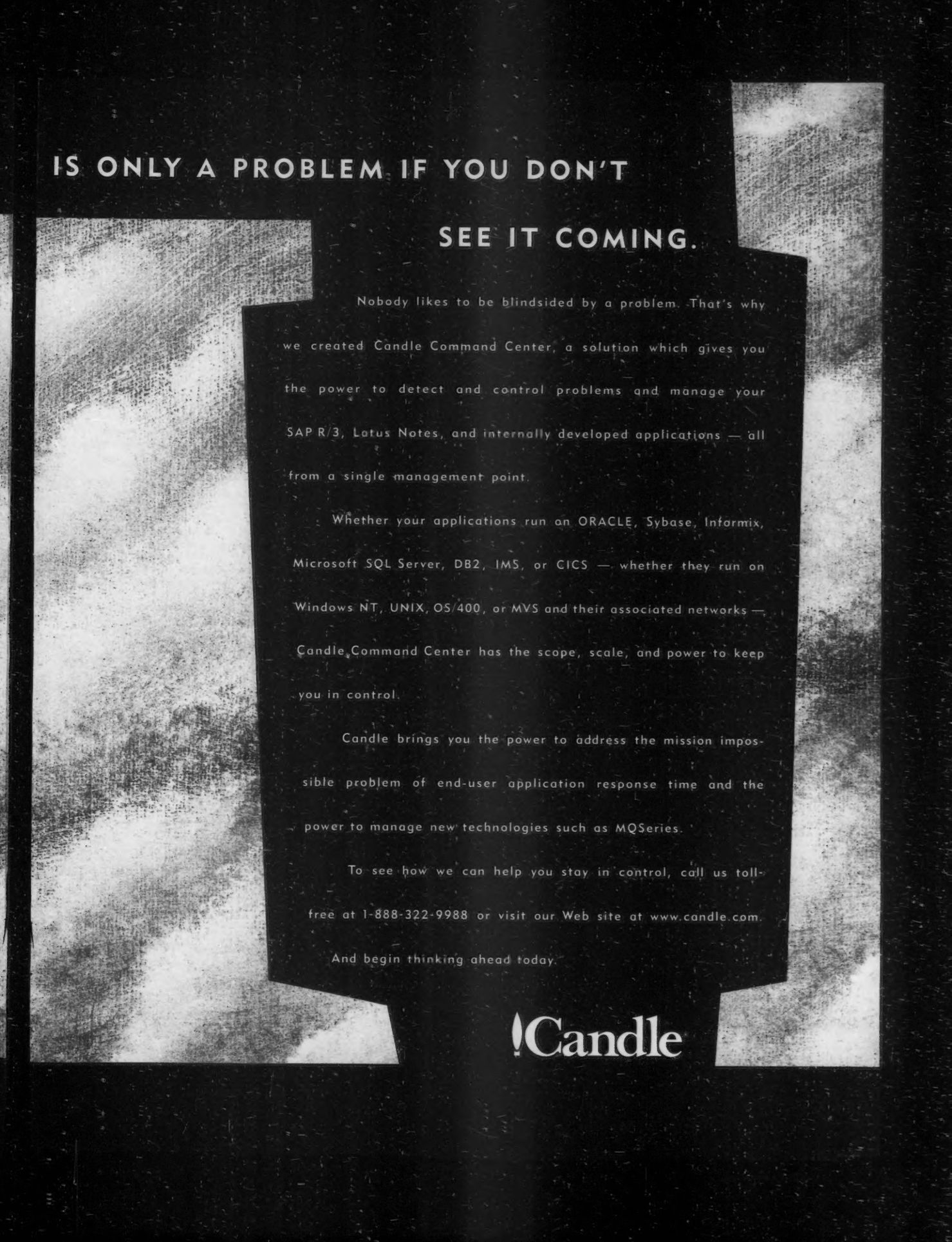
I empathize with the pragmatic motives and the behavioral realities of enterprise computing today, but I have to wonder whether big bangs are going to lead to IS organizations that mismanage their attention portfolios in ways that confuse events with process. There's a thin line between trends and trendiness, fads and discontinuities, alerting people and nagging them. The universe had one big bang; I personally know companies that have had three in four years.

Today, big bangs are about creating urgency and credibility for change. But use them strategically. By the end of this decade, we'll probably be complaining that they're another reason for IS cynicism. We do an excellent job of pushing useful management ideas beyond diminishing returns, don't we?□

Schrage is a research associate at the MIT Media Lab and author of No More Teams! *His Internet address is schrage@media.mit.edu.*

WITH DISTRIBUTED APPLICATIONS, A PROBLEM




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COMMENTARY

Direct model claims victory

DAVID MOSCHELLA

IT'S OFFICIAL. If you buy your PCs from a direct vendor such as Dell, Gateway or Micron, you will not only save money, but you will also probably be happier. That's the unavoidable conclusion of *Computerworld*'s recent enterprise PC customer satisfaction survey.

As detailed in this issue's Buyer's Guide (page 66), *Computerworld* has surveyed more than 1,600 PC buyers at medium-size and large U.S. organizations, generating statistically valid data for the top 10 desktop and notebook vendors.



The research could hardly be more timely. Sales from direct vendors are booming, forcing Compaq to publicly debate the future of its traditional channel approach. Going into the survey, we were confident that customers would recognize the price advantages of the direct model.

But how would their enterprise services compare?

The answer is clear. Selling direct isn't just about eliminating reseller commissions. It's about knowing your customers, getting them the latest technology, configuring systems as needed and testing for compatibility and rapid service response. In those and other areas, Dell consistently scored big, almost always among the top three vendors across the 33 desktop and notebook categories measured. Gateway and Micron were just a small step behind. The former was strong in desktops, and the latter very strong in notebooks.

The only channel-based player to match the scores of the three direct vendors was Hewlett-Packard, which continued its remarkable streak of being first or second in every category it competes in across our network, enterprise systems and now PC satisfaction surveys. HP's overall record is so strong, it makes you wonder if somehow it has just trained its customers to always report how happy they are.

What about the traditional PC giants? Compaq's results were uninspiring, especially in notebooks; the No. 1 PC vendor was rated average for most product and service categories. Like Compaq, notebook giant Toshiba will find little comfort in its generally mediocre scores. For IBM, the results were more damaging. Its desktop ratings were consistently below average, especially in terms of hardware quality and cost of ownership. Its notebooks faired better in quality but faced similar value concerns.

From a broader perspective, the success of the direct approach should be seen as a success for our industry. Information technology makes direct vendors' mass customization and one-to-one marketing possible. It enables them to keep up with ever-changing and highly complex technologies. It's a big step toward real electronic commerce and provides a compelling proof-of-concept story. Other industry sectors surely will notice.

For vendors still using a traditional reseller strategy, this research is perhaps a final warning. The PC industry has found a superior sales and service approach that will only gain momentum as long as PC technology continues to change rapidly. Technology-enabled mass customization can provide the highest quality and the lowest price. Deep down, channel-based vendors know that tinkering with processes just won't cut it. It would be a dangerous time to remain in denial. □

Moschella is senior vice president of research at Computerworld, Inc. His Internet address is david_moschella@cw.com.

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Corporate Strategies

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Briefs

Entex wins contract

AlliedSignal, Inc. in Morris Township, N.J., has awarded a multimillion-dollar, three-year PC support outsourcing contract to Entex Information Services in Rye Brook, N.Y., to manage its 36,000 PCs across North America. The contract may eventually be extended to cover AlliedSignal's global desktop systems.

Mellon/MCI venture

Mellon Global Cash Management, a unit of Pittsburgh-based Mellon Bank Corp., plans to form a joint venture with MCI Systemhouse to provide customers with accounts payable and accounts receivable business process outsourcing services. Using Oracle Corp.'s Application software, the venture will process transactions, post payables and receivables and update customers' general ledger systems.

Health care broadcast

Perot Systems Corp. in Dallas has teamed up with InteliHealth and PointCast, Inc. to launch an Internet broadcast service for health care professionals. InteliHealth is a joint venture formed by Aetna U.S. Healthcare and Johns Hopkins University and Health System.

Independent computer consultant facts

- Typically male, 36 years old, owns his own home and is married with children
- Average earnings of $63 per hour or $120,000 per year
- 25% exceed the average, earning up to $180,000 per year
- Currently there are 1.25 million independent computer consultants, increasing 17% annually

Base: 270 independent IS consultants

Source: The Information Elite by Dominique S. Black and Richard C. Andreini, Redwood Shores, Calif.

Outsourcer scores retail win

▸ *IT system assists ball teams with sales*

By Thomas Hoffman
BALTIMORE


THOMAS HOFFMAN

Aramark's Cindy Troll:

Demand for hot dogs, hats and T-shirts at Baltimore's Camden Yards "is like Christmas eight days in a row"

BASEBALL PURISTS detest changes of any kind to our national pastime, such as the introduction of interleague play this season.

But when it comes to baseball's use of information technology, purists haven't had much to worry about — most of the hot dogs and hats sold at America's ballparks are still tracked with pencil and paper.

But small-city franchises such as the Pittsburgh Pirates "have to optimize concessions to squeeze every penny they can to survive," said Bruce Rogow, a former Gartner Group, Inc. analyst who is now an independent consultant in Marblehead, Mass.

Most major league baseball

Outsourcer, page 38

Web tool helps fight world poverty



A U.N. program's Web site helps fight rural poverty by sharing information from recipients such as these soil and water conservation program participants in Burkina Faso, West Africa

▸ *U.N. Web project shares experiences*

By Sharon Machlis

IN THE FIGHT against rural poverty, a program that helped farmers in the hills of Nepal might have useful lessons in the highlands of South America. But how would anyone find out?

"That's what the [Internet] is for," said Pierre Spitz, director of the United Nations International Fund for Agricultural Development's (IFAD) office of evaluation and studies in Rome.

IFAD set out on a two-year project to develop a computerized knowledge base culled from 461 projects undertaken since 1978. Initially, the data resided on an internal network. But since last month, a revised version has been available on the World Wide Web (*www.ifadeval.org*).

"We want to become a knowledge center on fighting rural poverty," Spitz said. "People can learn from the experience of others. [Programs] need to be cross-fertilized."

Spitz said the internal network has already helped similar projects in Ghana, India and Nicaragua to learn from each other, as experiences help formulate suggestions for what to do — and what not to do —

Web tool, page 38

CONSULTANTS

Firm saves independents from red tape

By Julia King

RED TAPE, ever-changing accounting rules and a better than average chance of a tax audit are the triple career whammies that most freelance IS consultants face.

But not Janet Saulter-Hemmer, a 42-year-old information systems trainer in Parsippany, N.J.

On a daily basis, Saulter-Hemmer functions as an independent consultant, choosing her work assignments and setting her rates. But to the Internal Revenue Service, she looks just like an employee — one who receives a regular salary and an annual W-2 wages statement under a unique working arrangement with McLean, Va.-based Netplex Group, Inc.

"I have total control over my marketing and my clients," Saulter-Hemmer said.

Independents, page 39

Pacific Bell lures users to Internet for self-help

By Kim Girard

PACIFIC BELL INTERNET'S Judith Meskill knew that paying internal staffers to answer questions that customers could easily answer themselves meant money lost for the Internet service provider.

So Meskill searched for a World Wide Web-based service that would enable business and residential customers to quickly find their passwords or fix their own modem problems.

Her search fell in line with a growing trend toward online self-help services that can reduce the use of costly call centers.

"The major challenge in this industry is to craft call-avoidance strategies," said Meskill,

Self-help service, page 39

Outsourcer scores win

CONTINUED FROM PAGE 37

teams and their concessionaires "have nowhere near the same technological sophistication of even the most primitive retailers," said Rogow, who is familiar with operations at several ball clubs.

The Babe Ruth of the managed services market, Aramark Corp., is trying to change all that. The Philadelphia-based vendor, which runs retail operations at nine major league stadiums, 70 professional sports facilities and 18 convention centers, has been running an automated point-of-sale/inventory system at Oriole Park at Camden Yards for the past three years.

Retail Automated Merchandising Systems (RAMS) from Richter Systems, Inc. in New York has helped Aramark boost sales by making sure the right inventory is on hand. That speeds the flow of merchandise and slashes sales costs by minimizing warehouse stockpiles, said Cindy Troll, a marketing analyst at Aramark's leisure services division.

The RAMS system, which runs on a SCO/Unix server, is "able to highlight any shortages we might be facing on a daily basis," said Troll, a five-year Aramark veteran who came to the services giant as a free agent in 1992 after a stint at New York-based Macy's.

HIGH SALES

For an eight-game Orioles homestand, where the team consistently sells out the ballpark, sales in the main gift shop "is like Christmas eight days in a row," Troll said.

Retail traffic gets even zanier when the Orioles play a nearby interleague opponent such as the Philadelphia Phillies, as they did on a recent homestand earlier this month. "It gets crazy here — this is a slow night for us," said Glenn Szymanski, store manager at Camden Yards' main gift shop, where more than 100 people jammed the store before a recent Orioles/Phillies game.

RAMS "helps identify when we're having a run on Cal Ripken Jr. T-shirts and keeps the lines moving quickly," Szymanski said. At the time, quick-moving lines in the store were never more than three people deep.

Troll placed Aramark's software investment in the five-figure range, not counting the more than 50 point-of-sale terminals Aramark had to install at Camden Yards. She placed the payback at less than three years.

And Aramark last year won a multiyear contract to handle merchandise, food and beverage concessions at Atlanta's new Turner Field. Although hundreds of factors weighed into the Atlanta Braves' decision behind selecting a services vendor, Troll said she is convinced that its use of IT played a key role. Outsourcing customers such as the Braves and Orioles "want to see something that's 21st century and something that lends them competitive advantage," Troll said. □

Web tool helps fight world rural poverty

CONTINUED FROM PAGE 37

when spending money on agricultural projects.

The Evaluation Knowledge System contains "lessons learned" from the $5 billion spent by the agency during the past 18 years.

"This is one of the most complex projects I have ever done," said Paris-based computer consultant Diaa Zenie.

The internal version uses viewing software from Microsoft Corp. and proprietary applications developed in C++ and Delphi. Data is then translated into Hypertext Markup Language for the Web version.

The information is altered somewhat for the Internet so that individuals involved in the programs can't be identified. Areas that don't have Internet access can receive a PC version on diskette.

The project offered unique challenges because of its worldwide nature, with project members located in Argentina, India, Morocco, the U.S. and Europe, Zenie said.

For example, because a key system goal was ease of use, design wasn't the usual process of drawing up specifications and developing a system, Zenie said. Instead, he would come up with an initial simulation, send it to many testers for comment, and then make modifications — again and again.

"To be honest with you, sometimes I had to knock my head against the wall during the development, but I am very happy with the results," he said. "When you finish, you have something that is multicultural, too, [that can be] used by rural poor themselves." □



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Self-help service

CONTINUED FROM PAGE 37

director of product and systems development at Pacific Bell Internet in San Francisco.

"Customers are becoming less sophisticated, and there are not enough people to answer phone questions. People who can't program their VCR are now using cutting-edge computer technology," she said.

Several months ago, Meskill's crew installed Eservice, Web-based software from Silknet Software, Inc. in Manchester, N.H. Pacific Bell Internet's self-help service went live July 1.

The system connects a knowledge base with answers to 40 of the most common software installation problems to Pacific Bell Internet's Web page (*public.pacbell.net*).

If users can't find answers by searching the Web page, they can submit a trouble ticket or make a telephone call. Answers can be returned via electronic mail or a return phone call. A knowledge base from Edison, N.J.-based Advantage KBS, Inc. narrows the search by asking the user to answer questions. Using the knowledge base, information systems employees can handle a typical 15-minute call in less than three minutes.

So far, Meskill said, 40 of Pacific Bell Internet's 100,000 customers have found the service. She said many more will take advantage of the tool because it is available all the time and can eliminate phone waits.

"If you can reduce [phone] calls from 15% to 20%, you're in good shape," Meskill said.

Hugh Bishop, an analyst at Aberdeen Group, Inc. in Boston, said the Silknet system differs from offerings from rivals Vantive Corp. in Santa Clara, Calif., and Scopus Technology, Inc. in Emeryville, Calif., because it is built on ActiveX, a technology for posting Windows programs to the Internet. That means Silknet was designed for the Web instead being of a Web interface built on top of an old system made to track and log trouble tickets. Because Eservice is Web-based, proprietary software isn't needed.

Of the telecommunications carriers, Pacific Bell Internet is likely ahead in the online self-help game simply because few companies are tackling such projects, said Robert Marani, a senior telecommunications analyst at The Yankee Group in Boston. Coupled with an automated voice-response system, a Web-based service could cut help-desk calls by 70% after six months, he said. □

Independents

CONTINUED FROM PAGE 37

In exchange for 4% of her earnings, a Netplex service representative dedicated to her account processes Saulter-Hemmer's invoices, tracks and pays her expenses and goes after deadbeat clients for payment.

"I've had clients who have gone over 90 days and not paid, and [my Netplex representative] has been like a pit bull," recouping payments as high as $10,000, Saulter-Hemmer said.

Started 10 years ago as a cooperative for independent technical workers, Netplex has grown to 280 consultants who work as employees under its Independent Employee Services program. Consultants' fees are funneled into individual profit center accounts against which the workers' salaries and expenses are drawn.

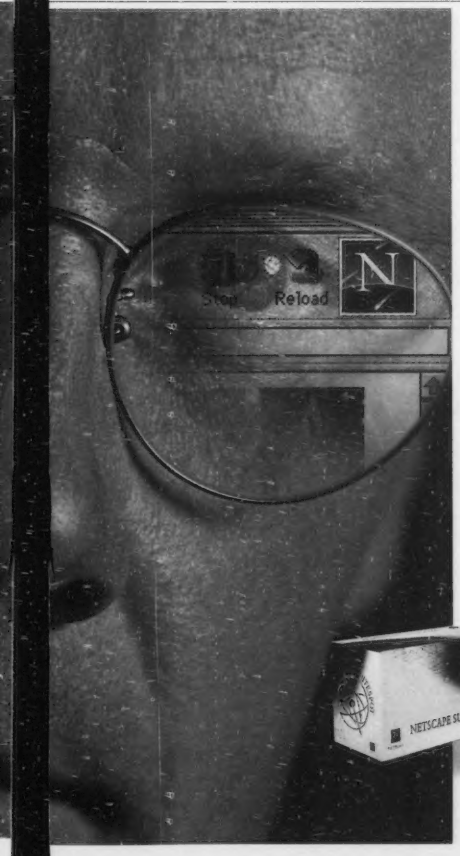
Netplex employees pay for their own benefits but together can get lower rates than they would as individual contractors. Benefits include lower-priced group health, life and liability insurance. The company also offers help with financial planning and changing tax laws.

"As an independent, you have periods of feast and famine," said George Menendez, a consultant in Morganville, N.J. "So I look at my projected income, then have Netplex pay me at a certain rate so that it evens out the cash flow. It gave me the best of both worlds."

Benefits for Netplex go beyond the 4% fees it collects for handling consultants' back-office tasks. Eventually, the company plans to get more involved in the staffing business, collecting additional fees for workers it places on projects.

"Our goal is to cultivate a farm team of talent that we could channel to our own customers," said Gene Zaino, Netplex's CEO and a former tax accountant. "Our strategy is that we'll be able to find [consultants] other projects from time to time, and we'll earn a margin on that."

Earlier this month, Netplex launched a service aimed at employers, many of which now shy away from independents for fear that the IRS will reclassify them as employees. □



has been staring you in the face for over two years.

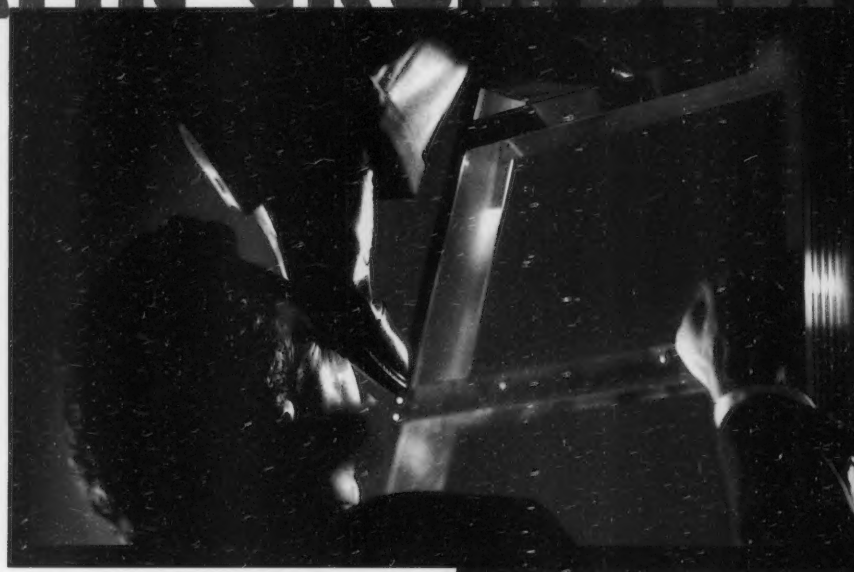
beyond the traditional boundaries that restrict existing proprietary solutions.

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21. Dir./Mgr. MIS Services, Information Center
22. Dir./Mgr. Network Sys., Data/Tele. Comm., LAN Mgr./PC Mgr., Tech. Planning, Administrative Services
23. Dir./Mgr. Sys. Development, System Architecture
31. Programming Management, Software Developers
41. Engineering, Scientific, R&D, Tech. Management
60. Sys. Integrators/VARs/Consulting Management

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12. Vice President, Asst. Vice President
13. Treasurer, Controller, Financial Officer

DEPARTMENTAL MANAGEMENT
51. Sales & Mktg. Management
70. Medical, Legal, Accounting Mgt.

OTHER PROFESSIONAL MANAGEMENT
80. Information Centers/Libraries, Educators, Journalists, Students
90. Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply.)
Operating Systems
(a) Solaris (e) Mac OS
(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
App. Development Products ❒ Yes ❒ No
Networking Products ❒ Yes ❒ No
Intranet Products ❒ Yes ❒ No

4. Which of the following products do you buy, specify, recommend or approve the purchase of? (Check all that apply.)
(a) ❒ Internet software
(b) ❒ Internet browsers
(c) ❒ Web authoring/development tools

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70. Mining/Construction/Petroleum/ Refining/Agriculture
80. Manufacturer of Computers, Computer-Related Systems or Peripherals
85. Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
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2. TITLE/FUNCTION (Circle one)
IS/MIS/DP MANAGEMENT
19. Chief Information Officer/Vice President/Asst. VP IS/MIS/DP Management
21. Dir./Mgr. MIS Services, Information Center
22. Dir./Mgr. Network Sys., Data/Tele. Comm., LAN Mgr./PC Mgr., Tech. Planning, Administrative Services
23. Dir./Mgr. Sys. Development, System Architecture
31. Programming Management, Software Developers
41. Engineering, Scientific, R&D, Tech. Management
60. Sys. Integrators/VARs/Consulting Management

CORPORATE MANAGEMENT
11. President, Owner/Partner, General Mgr.
12. Vice President, Asst. Vice President
13. Treasurer, Controller, Financial Officer

DEPARTMENTAL MANAGEMENT
51. Sales & Mktg. Management
70. Medical, Legal, Accounting Mgt.

OTHER PROFESSIONAL MANAGEMENT
80. Information Centers/Libraries, Educators, Journalists, Students
90. Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply.)
Operating Systems
(a) Solaris (e) Mac OS
(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
App. Development Products ❒ Yes ❒ No
Networking Products ❒ Yes ❒ No
Intranet Products ❒ Yes ❒ No

4. Which of the following products do you buy, specify, recommend or approve the purchase of? (Check all that apply.)
(a) ❒ Internet software
(b) ❒ Internet browsers
(c) ❒ Web authoring/development tools

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The Internet

Electronic Commerce ♦ The World Wide Web ♦ Intranets

Briefs

Web server security

Security Dynamics Technologies, Inc. in Bedford, Mass., has released an authentication tool for Netscape Communications Corp. servers. ACE/Agent uses randomly generated password codes to help secure network access. With the product, users can sign on only with a personal identification number and a random code generated from a security token.

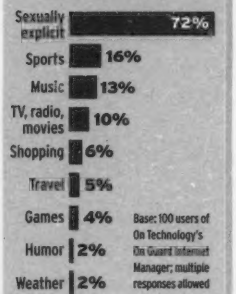
Web groupware

SoftArc, Inc. in Markham, Ontario, this week will ship the FirstClass Intranet Server, software that adds World Wide Web hooks to the company's FirstClass messaging and groupware system. With the software, electronic mail, discussion databases, remote access, forms processing, database access and publishing services are available over IP networks. It costs $999.

Web presentations

Contigo Software in San Diego, plans today to announce a new release of its Web Presenter software for converting Microsoft Corp. PowerPoint and Corel Corp. Presenter presentations to a format that can be viewed by any Java-enabled Web browser. Presenter lets a user giving a presentation control other users' browsers and guide them through presentations. Pricing for the software starts at $195. Web Presenter will be available next month.

What type of sites are your users visiting?



Source: On Technology Corp., Cambridge, Mass.

Surfing surrogate saves time

▸PoliTech clients include candidates, lobbyists

By Craig Stedman



THE INTERNET puts gobs of information at everyone's fingertips. But not everybody wants to while away the day surfing the Web for data.

Take Keith Schuette, for example. Schuette, a political lobbyist in Washington, used to set aside an afternoon each week to browse the World Wide Web for news articles, trade reports and other postings related to his foreign-government clients.

"Not that it wasn't fun and fascinating, but I get paid to do other things," said Schuette, director of international operations at lobbyist William D. Harris & Associates. "There's just no way that I've got time to go around and hit all the sites that report on [my clients]."

And the surfing process was chewing up more and more of Schuette's workday because of the never-ending upward spiral in the number of Web sites, even for Bolivia and the other relatively obscure countries he represents.

Schuette could have hired an in-house researcher to do the clicking for him. But instead, he outsourced his Web browsing to PoliTech Research, Inc., a Reston, Va., company that in January began offering to surf the Internet for political candidates, lobbyists and multinational corporations.

Now Schuette gives data collection guidelines to PoliTech, which finds relevant material on the Internet and analyzes it for accuracy and impact. The information is collated into paper reports and stored in a database that Schuette can access via an extranet. The service costs about what a full-time researcher would, "but it's more sophis-

Web surfing, page 42

SOFTWARE

Pentagon to get updates online

By Mitch Wagner

IN ONE OF the largest electronic software distribution deals ever, two Department of Defense agencies have signed a $50 million deal with Software.net to receive updates to Microsoft Corp. applications over the Internet.

The Defense Logistics Agency and the Department of Defense Procurement Agency expect to save $30 million compared with the cost of buying the same software through conventional channels. Software.net, a service owned by CyberSource Corp. in San Jose, Calif., will deliver the software to 70,000 federal employees annually.

> "When employees come in in the morning, everyone is updated with the same version of the software."
> – Arthur Bailey, Defense Logistics Agency

The Pentagon agencies selected electronic software delivery over conventional channels for reasons of convenience as well as finances, said Arthur Bailey, a spokesman for the Defense Logistics Agency, which administered the contract.

"The advantage to doing it electronically is the amount of time you save," Bailey said. "The installs can be done in the nighttime, across the networks, and when employees come in in the morning, everyone is updated with the same version of the software."

The electronic distribution also will make it possible to update software with the click of a button rather than having to send employees around the world to update the software by hand. That will save employees time and will make it easier to ensure that employees are using the same software versions, which will minimize compatibility problems.

Pentagon, page 42

COMMENTARY

Business on 'net? Phooey

MITCH WAGNER

TWO YEARS AGO, the big news for Internet doomsayers was that the Internet was going to melt down in 1996. This year's smaller news was that the same doomsayers apologized, saying it looked as if they were overly pessimistic and that the Internet was just fine after all.

Phooey on that, say I. The Internet did melt down. It's just that we were all so busy downloading the latest bug fixes and patches for our Internet software, we didn't notice.

The Internet's notorious unreliability is its biggest obstacle to widespread acceptance as a mainstream commerce channel — more so than security, ease-of-use and other barriers.

We hold a higher standard of accountability to communications channels such as telephones, overnight delivery companies such as Federal Express, and faxes. We expect them to work almost all the time, and they do. The Internet won't become a real tool for business until it can meet the same high standard.



As long as you can't be sure of getting an Internet connection, the Internet will always be an alternative communications channel — something you use in addition to something reliable. The applications that run well on the Internet today are things such as package-tracking applications and human-resource information lookups. In those applications, if the E-mail bounces or the Web server is down, it's no big deal. You can just try again later. And if worse comes to worst, you can pick up a phone or send a fax.

I had plenty of time to ponder this subject recently when my Internet connection went down. Again.

Wagner, page 43

Pentagon updates online

CONTINUED FROM PAGE 41

But electronic software distribution has its potential pitfalls, which have prevented many companies from adopting the technology, said analyst Amy Wohl, president of Wohl Associates, a consultancy in Narberth, Pa. One concern is that some of the software might arrive corrupted.

"If a line blips while I'm capturing the wrong bit, and I don't find it for a few weeks — after I've already distributed it to 70,000 people — that can wreak a lot of havoc," Wohl said. "And I can avoid that by waiting a day for the CD-ROM to come [via] FedEx."

Electronic software distribution is a small but growing channel for getting software into user hands. Software companies expect about 30% of their revenue to come from electronic channels in two to five years, according to a recent survey by "Softletter," an industry newsletter in Watertown, Mass.

Traditional distributors such as Tech Data Corp. in Clearwater, Fla.; Merisel, Inc. in El Segundo, Calif.; and Intelligent Electronics, Inc. in Exton, Pa., are outsourcing services to companies such as CyberSource and LitleNet LLC in Lowell, Mass., to provide back-end distribution services.

Software.net will post the software to a secure, password-protected World Wide Web server that can be accessed by designated Defense Department employees on the same day the software ships from Microsoft. Included in the contract are Windows NT Server, Exchange, Internet Explorer, Internet Information Server, Front Page and Microsoft Office 97.

The software is encrypted for travel over the Internet using Ziplock from Portland Software, Inc., which uses encryption algorithms from RSA Data Security, Inc. □

Web surfing gets outsourced

CONTINUED FROM PAGE 41

ticated," Schuette said.

PoliTech uses a variety of Web search tools — including Fairfax, Va.-based IsoQuest, Inc.'s NetOwl text analysis and data extraction software — to look for information on political issues and potential political risks in foreign countries. The company has about 20 clients thus far, said Bob Liscouski, its president.

Black America's Political Action Committee (BAMPAC), which supports conservative blacks running for office, recently started relying on PoliTech to surf the Web for prospective corporate donors and other sources of funds.

"We have access to the Web, so we're not in the Dark Ages here," said Alvin Williams, BAMPAC's executive director in Washington. "It's more a question of time for me. There's a wealth of information out there, but getting it and culling it is the ball game. That's very laborious."

For resource-strapped organizations, a service such as PoliTech's can open up the data riches of the Web, said Carl Frappaolo, an intranet and document management analyst at Delphi Consulting Group, Inc. in Boston. But NetOwl and other emerging search tools should make Web surfing less overwhelming for individuals, he said.

Even so, the Internet doesn't seem to be putting people such as Mercay Pinder out of business. Pinder, a research analyst at Advanced Manufacturing Research, Inc. in Boston, said the Web isn't choking off the inquiries she gets from the consulting firm's user and vendor clients.

The answers Pinder finds are often available to all comers on the Web. "But when you have people at a senior level, a lot of them don't even look at the Internet because it takes so much time," she said. □

SIEMENS

Before you buy another phone, check the



Wagner: Business on 'net

CONTINUED FROM PAGE 41

I eventually discovered that my main Internet service provider, UUnet Technologies, had suffered a major outage the day I had my problems. My bright idea of having a backup Internet service provider would've worked fine — except my backup provider was Netcom On-Line Communication Services, and Netcom had a bad hair day at the same time as UUnet.

"It's like booking passage on the *Titanic* with backup reservations on the *Hindenburg*," my editor said.

By now, Internet veterans who've read this far are grinning in rueful agreement. Everybody who's been on the Internet for a while has stories like mine. Consider some recent stories in the headlines:

- ETrade Group, a Palo Alto, Calif., company that runs an online stock-trading service, suffered an Internet server crash near the close of stock trading June 24. The backup failed, too, and ETrade had to switch to phone service to handle customer queries.
- Even Microsoft has problems keeping its Web site available. Its site has been subject to slowdowns and outages recently, problems that Microsoft officials blame partly on hacker attacks and partly on their own failure to configure the Web site to handle the traffic load generated.
- Inverse Network technology estimates that the call failure rate last month for 13 top Internet service providers was about one in eight — down substantially from March, when more than a fifth of all calls failed. For America Online alone, more than a third of all calls last month failed.

By the way, when I asked for Inverse's latest reliability figures for this column, my contact at Inverse said, "I'm E-mailing that out right away." And she did — but the information didn't arrive in my in-box until an hour later. Guess the message just stopped off for a beer on the way or something.

When even the 'net experts can't get it to perform promptly, it's a sign that significant improvement is needed before it's ready for regular business folks. □

Wagner is Computerworld's senior editor for electronic commerce and the Internet. His Internet address is mitch_wagner@cw.com.

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NEW PRODUCTS

LIBERTY INTEGRATION SOFTWARE, a subsidiary of General Automation, Inc. has announced Web Publisher, software to let users build interactive World Wide Web applications using a MultiValue database.

According to the Vancouver, British Columbia, company, Web Publisher works with popular Web, Hypertext Markup Language and Java publishing tools to build custom applications to provide easy access to existing MultiValue database environments. It works with popular Web browsers and doesn't require C programming.

It costs $495.

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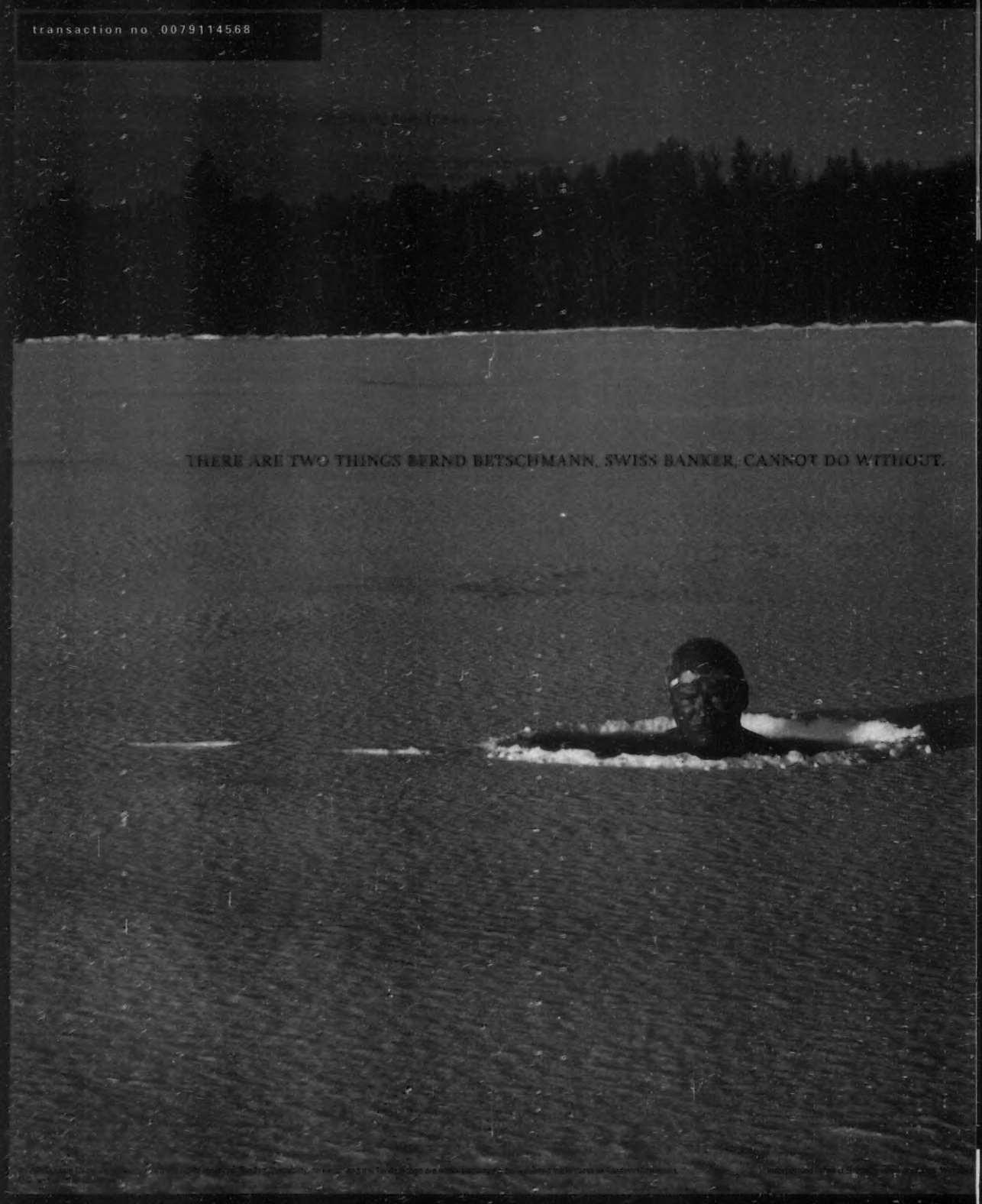
MACROMEDIA, INC. has announced Authorware 4 Interactive Studio, software tools for creating World Wide Web-based interactive learning applications for corporations.

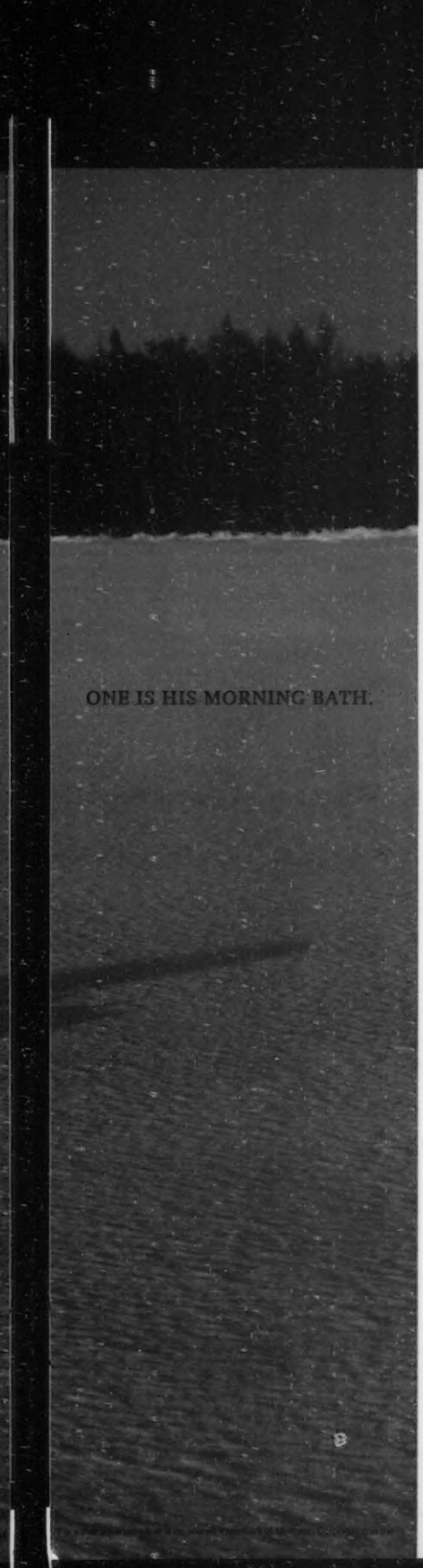
According to the San Francisco company, new features in the latest version include the ability to incorporate all Macromedia Shockwave file formats in Shockwave Authorware applications, including Director, Flash and Shockwave Audio. Corporate intranet users can more easily maintain an online distance learning application made with Authorware, so the content in an online catalog can be updated via the Web without having to modify the logic of the application.

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The Enterprise Network

LANs ♦ WANs ♦ Network Management

Briefs

Mail call

E-mail is the most widely developed networked application. About 90% of corporate workers use it.

Source: Zona Research, Inc., Redwood City, Calif.

BindView tracks assets

Houston-based BindView Development Corp. has added an asset-management option to its namesake tool kit for analyzing user and security data in the directories of Microsoft Corp. and Novell, Inc. servers. NETinventory audits the hardware and software configuration of each user's PC to help manage changes, plan upgrades and track software licenses. Pricing starts at $695 for one console and from $9 to $24 per node.

3Com management

Seeking to simplify network management tasks, 3Com Corp. in Santa Clara, Calif., is including SmartAgent software in new hubs and switches so authorized users can configure or troubleshoot the devices through a browser interface. 3Com plans to Web-enable the rest of its internetworking gear to help managers of small networks and to complement its Transcend enterprise management tools.

LAN modem links

Shiva Corp. in Billerica, Mass., recently released Shiva Dial-Out software for Windows NT Workstations on networks outfitted with Shiva remote access server. The software lets PCs make outgoing modem connections, eliminating the need for individual modems and telephone lines. The software is available now. Shiva customers can download it for free from the company's Web site at www.shiva.com. It requires ShivOS 4.5 or higher and is shipping with the Shiva LanRover product line.

User plea: One directory for all

▸ Meta directories save money by simplifying information structure

By Barb Cole-Gomolski

MORE THAN a year into a project to consolidate all the directory data on his users into a single browser-accessible database, and Tim Brandt is less than half done. But he's still ecstatic.

The project's goal is to eliminate the need to search at least five major directories of electronic mail, the telephone system, network operating systems and other applications to locate employees.

The directory now stores data for about 30,000 of the company's 65,000 employees.

But Brandt, a senior consultant at a large manufacturer in the Midwest, said he is happy to have gotten this far because there is no master plan for building a meta, or universal, directory.

Meta directory pros	Meta directory cons
▮ Lowers administration costs	▮ Requires a lot of custom programming
▮ Improves user access to directory information	▮ Requires consolidating information from directories that cross departmental boundaries
▮ Helps deployment of electronic-commerce applications	

For example, it took Brandt three tries to determine that the human resources directory should be the standard format after attempts at using the telephone directory and Banyan Systems, Inc.'s StreetTalk proved futile because of proprietary interfaces.

Meta directories synchronize information from various directories and present it in a single view to end users. They also present a single place from which to manage user information, which cuts administration time and costs.

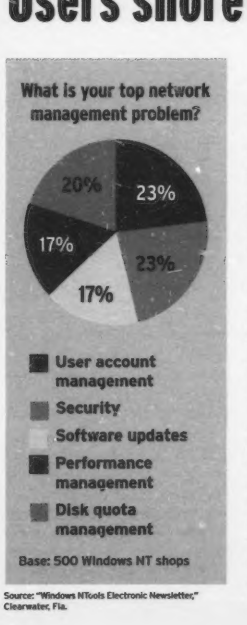
Electronic-commerce applications will probably rely heavily on directories to track security certificates and find information about individuals across companies, said Jon Oltsik, a senior analyst at Forrester Research, Inc. in Cambridge, Mass.

A recent study by the research firm showed that the average Fortune 1,000 company has 181 directories and that 42% syn-

Meta directories, page 49

•Third-party management utilities

Users shore up Win NT weaknesses



Source: "Windows NTools Electronic Newsletter," Clearwater, Fla.

By Laura DiDio

WINDOWS NT users who are weary of grappling with the operating system's multiple management facilities are turning to third-party products that combine the functions of several utilities in one package.

That is because, with the exception of System Policy Editor, Microsoft "hasn't significantly enhanced the baseline Windows NT management utilities for the past two years," said David Sheridan, an instructor at Tech-Teach International, Inc. in Arlington, Va. Tech-Teach offers Windows NT training classes (see related story, page 49).

System Policy Editor replaced an earlier, more unwieldy utility in Windows NT 3.51 to let administrators restrict and modify Windows NT Workstation and Windows 95 desktop configurations.



Microsoft has left critical items off NT administration

"Microsoft has left a lot of critical items off Windows NT administration, and the ones they do address are a pain to use," said Scott Rackliffe, assistant vice president of information systems at Farm Credit Financial Partners, Inc. in Agawam, Mass.

For example, to discover the trustee rights of a group or a user, Rackliffe said he must go into File Manager and highlight a directory, select and call up the permissions object

Win NT weaknesses, page 49

TROUBLESHOOTING

Spec shows how apps perform

By Patrick Dryden

AN EMERGING technique for measuring the performance of client/server applications gained troubleshooting capabilities last week.

The Application Response Measurement (ARM) specification, pioneered last year by Hewlett-Packard Co. and Tivoli Systems, Inc., provides hooks within vital business programs that enable external tools to monitor response times.

Vendors and users in the ad hoc group that defined the application programming interface (API) last week proposed two more functions. They beef up the API's performance monitoring focus by revealing troubleshooting details.

The ARM spec addresses the need for reporting service levels and isolating problems.

"We can monitor system and network performance, but we need a way to determine if our applications are functioning correctly," said Dennis DeMari, technical services manager at Factory Mutual Engineering Associates in Norwood, Mass.

ARM is catching on as a way for managers to provide "meaningful service-level statistics" to users through "a view from the application's perspective instead of just from the network and the systems," said Frank Henderson, chief technology officer at Netplex, a systems integrator in McLean, Va.

Organizations such as Boeing Commercial Airplane Group and Citicorp participate in the ARM working group and are taking steps to outfit their applications with the evolving API.

Monitoring transaction response time promises to be a proactive way to detect emerg-

App performance, page 49



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Meta directories

CONTINUED FROM PAGE 47

chronize their directories manually.

The survey also showed that meta directory projects aren't high on most chief information officers' lists of priorities, Oltsik said. Making matters worse, most companies don't have a person or team in charge of directory management, he said.

Brandt said he would achieve better results if there were a way to make directory data easier to synchronize. The software he uses, Via from Zoomit Corp. in Toronto, takes redundant directory information and turns it into a single entry. But the system doesn't always recognize that, for example, Timothy Brandt and Tim F. Brandt are the same person, he said. That's why so much of the firm's data has been left out of the directory.

Zoomit, which introduced its first meta directory about a year ago, this week will announce an upgrade and a single-log-on product that company officials said will make it easier for Via to synchronize directories.

The new version, due to ship by year's end, adds support for several Internet protocols, Netscape Communications Corp.'s Directory Server, the developer's release of Microsoft Corp.'s Active Directory and Novell, Inc.'s Novell Directory Service. The software already supports 15 other directories. The log-in service lets Windows 95 users access multiple systems by using one name and password. Because the log-in service is linked to all the directories on a network, it will automatically improve the product's ability to recognize users, company officials said.

HARD SELL

"The meta directory is on our list of things to do, but it's hard to make it a priority," said Terry Mitchell, an architecture planning analyst at Consumers Gas Co. in Toronto. Mitchell said meta directories are a tough sell because "people just think it's another directory."

If the utility can get its project going, it will gain a single point of control over directories stored in Lotus Development Corp.'s CC:Mail, Microsoft's Windows NT, Novell's NetWare and several in-house applications. "A meta directory pulls it all together," Mitchell said. "But it's not something you load on a Friday night and have running on Monday morning."

Nevertheless, meta directories have caught the attention of large sites that need to solve the problem now. Microsoft has helped to raise the issue by hyping its Active Directory, which will be available next year. □

Win NT weaknesses

CONTINUED FROM PAGE 47

and then repeat the process for each directory.

Last year, Rackliffe's biggest complaint was the dearth of tools to manage Windows NT Server domains and the file servers themselves.

Users turn to third parties to circumvent problems such as how to meld various management facilities into a single interface, manage disk quotas and restrict concurrent log-ins.

One popular tool is Hyena, from Adkins, Texas-based Adkins Resource, Inc. It shipped in March and costs $99 for a single-user license and $699 for a site license. Hyena melds several of Windows NT's basic management functions into a browser interface. Hyena lets administrators manage user accounts, servers and workstations on the network.

THIRD-PARTY PRODUCTS

Competitors include Computer Associates International, Inc.'s Cheyenne division in Roslyn, N.Y., which sells the ArcServe backup software, and CA itself, in Islandia, N.Y., which offers Unicenter for NT, an integrated scheduling, security and backup package. Intel Corp. in Santa Clara, Calif., sells LANDesk, a set of administration tools for Windows NT.

Peter Tagatac, a Windows NT engineer at Merrill Lynch & Co., a brokerage firm in New York, called Hyena an "invaluable tool" that saves him hundreds of configuration and setup hours each month.

"Hyena is the best product on the market right now for melding the functionality of several management utilities into one," Tagatac said.

He said he no longer opens up multiple, separate utilities to perform routine functions such as tracking active sessions and creating shares to make directories accessible to all users on the network. "The load times for each of the Microsoft utilities are too long for a large environment. Considering that we now have 5,000 users and are growing to 28,000 within a year, the time savings is phenomenal," he said.

REDMOND ANSWERS

Later this year, Microsoft Corp. will buttress its own management capabilities when it ships the Microsoft Management Console (MMC), an add-on package that will provide users with a unified mechanism to manage the Windows NT Servers and services.

"Microsoft's MMC will unify many of the bits and pieces of the operating systems. But it's eventual, not immediate," said David Strom, president of a consulting and testing firm in Port Washington, N.Y.

MMC will ship with Microsoft's Internet Information Server 4.0 in the third quarter and eventually will ship with every Windows NT-based product. □

Microsoft's management tools

Microsoft has embedded the following management facilities into the base Windows NT operating system:

- **User Manager lets administrators create and delete users and control user rights.**
- **Server Manager controls what processes are running and who accesses the server.**
- **Disk Administrator manages the Windows NT disk partitions and lets administrators control the fault-tolerance configurations.**
- **Performance Monitor lets administrators monitor local and remote system and network events and statistics.**
- **Backup Utility performs local and remote backups.**
- **Event Viewer lets administrators view Systems, security and application-oriented events and the results of security audits.**
- **System Policy Editor lets administrators restrict and modify Windows NT Workstation and Windows 95 desktops.**
- **Windows NT Diagnostics lets administrators view system configurations such as device drivers and hardware resources.**
- **Network Client Administrator lets administrators automatically install client software over the network.**
- **License Manager lets administrators control how client access licenses for NT Server are distributed. — Laura DiDio**

App performance

CONTINUED FROM PAGE 47

ing problems and track performance levels, according to George Sullivan, director of the Citibank systems and network management resource center in Reston, Va.

The proposed enhancements to the ARM API specifically address the need for reporting service levels and isolating problems, Sullivan said.

The original set of six simple calls lets developers label the key business transactions at the heart of their client/server applications, for example, and identify the start and stop of each transaction. Then information systems managers can apply tools directly to those applications, measuring the response time experienced by users.

MORE INFORMATION

Two enhancements are expected this fall in the ARM 2.0 developer's kit so that developers can reveal more details.

The end-to-end response time can be subdivided into components, so monitoring tools can decipher how long the transaction took to pass through the client, the network and all servers before completion.

And response times can be put in context by new variables, so monitoring tools can determine if a problem exists based on expected vs. actual transaction time.

"This next step is great for troubleshooting," Henderson said. When a monitor detects slowed performance by an application, "we can quickly focus attention on a problem with the database back end or with a router port," he said.

Vendors that already support the current ARM API in their monitoring tools include BGS Systems, Inc., Candle Corp., HP and Tivoli. Also, Unify Corp. includes support in its development tools.

Support is on the way from vendors such as Compuware Corp., Landmark Systems Corp., Oracle Corp., SAS Institute, Inc. and SES, Inc.

Growing support for the ARM API bodes well for future applications rather than those that IS managers are running or deploying now. Current applications must be upgraded to include the ARM calls, and even proponents acknowledge that defining individual transactions can be difficult.

"We could track application performance easily on mainframes. But now, many different servers are involved, and separate functions run all over the network. It's very difficult to make sure an application is running and measure how it's running."
– Dennis DeMari, Factory Mutual Engineering

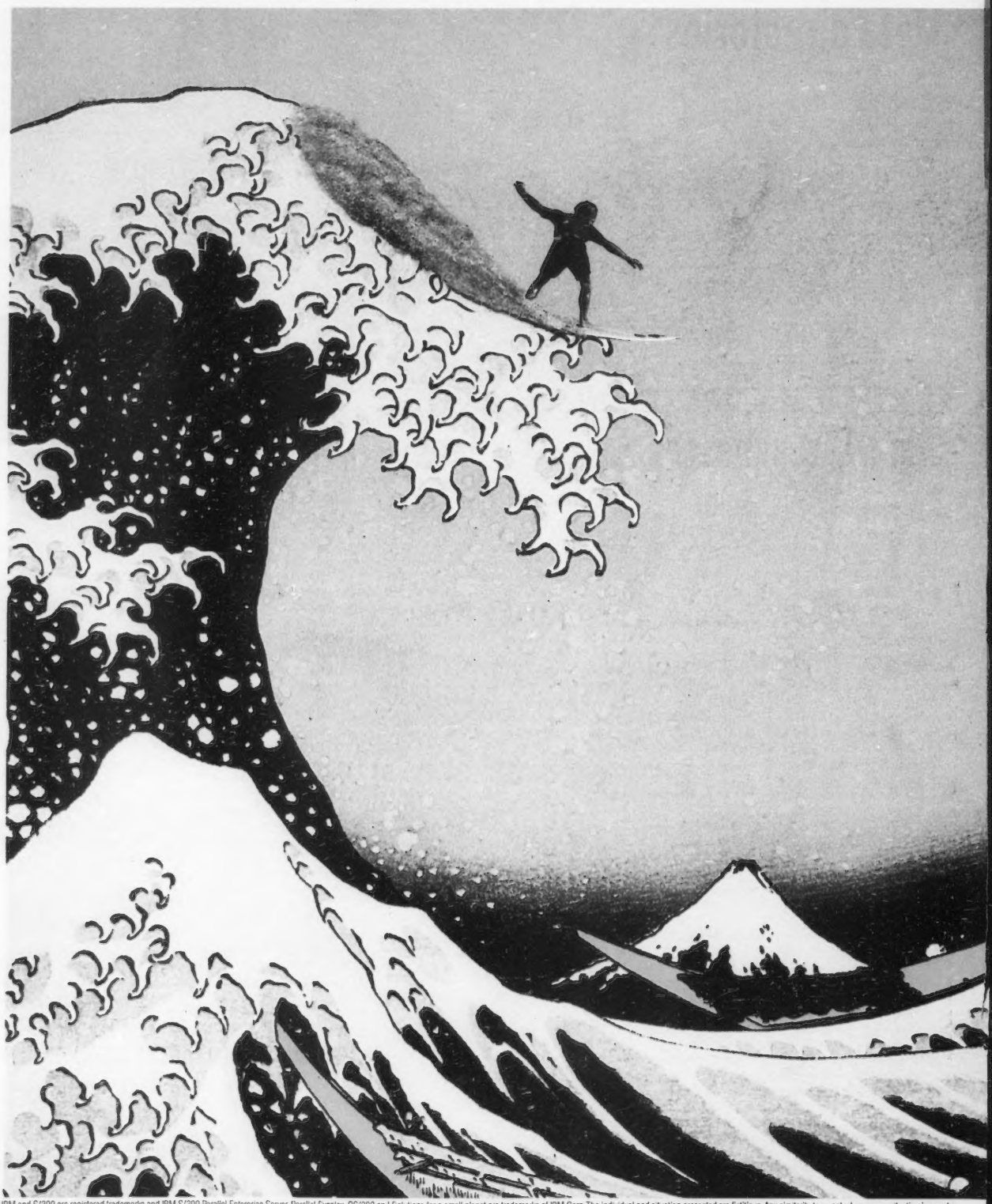
For example, DeMari is investigating ways to evaluate the performance of applications this month. The ARM API and compatible monitoring tools promise advantages for an order-management application because that project is just beginning, he said.

But to track the performance of another application that is being deployed now, DeMari said, "we're under a time constraint, so the alternative is buying canned packages." □

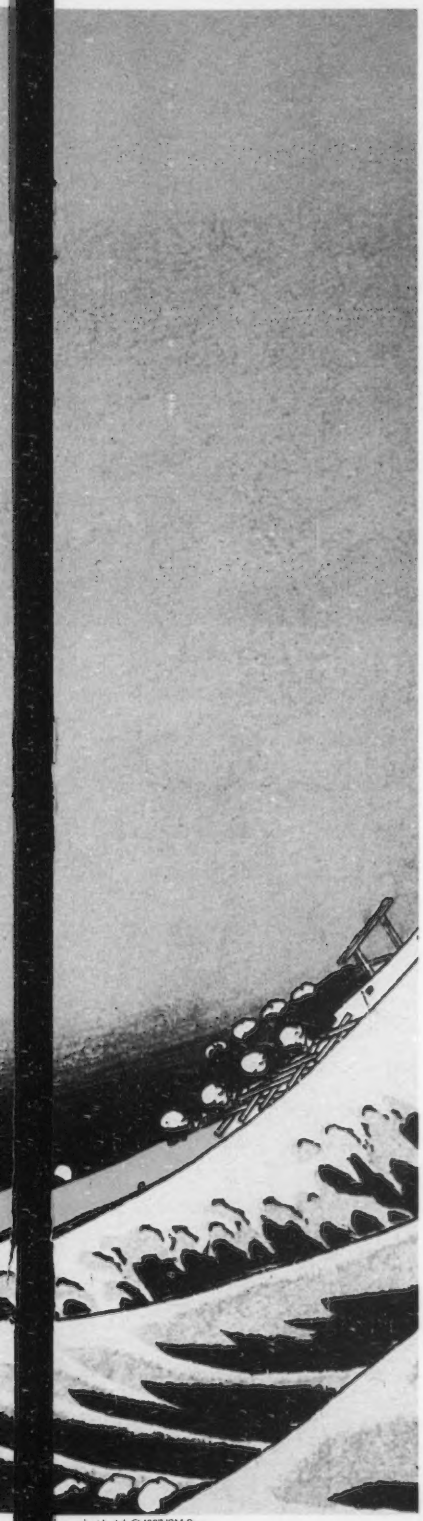
ARMED FOR MONITORING

Enhancements to the ARM programming interface will add two more capabilities:

1. **Identify the specific components of a transaction to discover the cause for slow response time**
2. **Let monitoring tools separate slowdowns based on expected and actual transaction-response times**



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Software

Databases • Development • Operating Systems

Briefs

Meta data searches

Logic Works, Inc. in Princeton, N.J., has upgraded its Universal Directory software for inventorying and searching meta data, the explanatory information that acts as a card catalog for data warehouses. Universal Directory 1.5 adds an ActiveX programming interface and support for automating updates of meta data directories. The software starts at $30,000 and runs on Windows NT servers and PC clients.

Visual Basic bridge

Pacific Software Publishing, Inc. in Bellevue, Wash., recently released VB Bridge, a connectivity software program that lets Visual Basic applications run using Microsoft Corp.'s Internet Server Application Programming Interface (ISAPI). Until now, Visual Basic program access was mainly supported via Common Gateway Interface scripts and not through ISAPI. VB Bridge is shipping now for $99; after Sept. 1 it will cost $179.

New PeopleSoft units

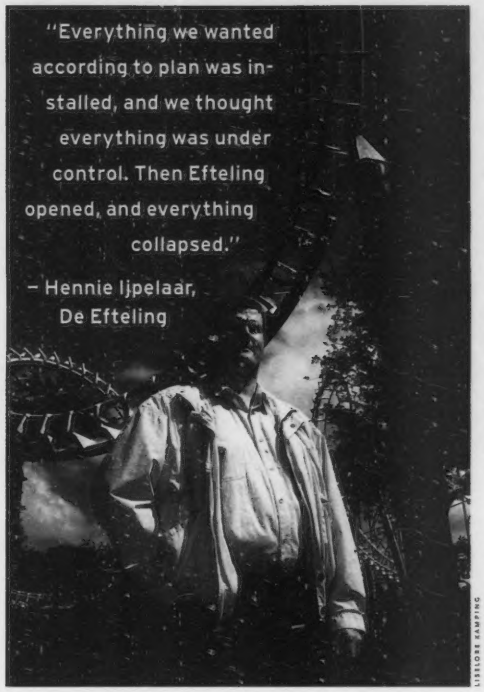
PeopleSoft, Inc. in Pleasanton, Calif., has announced the formation of two new business units to cater to the needs of the service, communications, utilities and transportation industries. PeopleSoft set up the units to help tailor its application package to specific industries.

Computer languages in use at companies worldwide

C	44%
Cobol	42%
C++	27%
Assembler	24%
PowerBuilder	18%
Visual Basic	18%
Other	95%

Base: 1,000 companies worldwide; multiple responses allowed

Source: 1996 Worldwide Benchmark Project from Rubin Systems, Inc., Pound Ridge, N.Y.



DOUG BROOKS

One wild ride

▸ Dutch amusement park whips system into shape after data overload crashes installation

By Randy Weston
KAATSHEUVEL, THE NETHERLANDS

INSTALLING SAP AG'S R/3 can be a roller coaster of a ride.

Fortunately for the employees at De Efteling BV amusement park in eastern Holland, roller coasters are their business. So when the park's new computer system based on R/3 collapsed soon after the park's opening day last year, the staff at De Efteling had to act quickly to recover.

SAP R/3 IMPLEMENTATION

"In April of 1996, we were ready to open," said Hennie Ijpelaar, manager of information and automation at the park. "Everything we wanted according to plan was installed, and we thought everything was under control. Then Efteling opened, and everything collapsed."

Ijpelaar said the problem was less with R/3 than with one as old as computing — "garbage in/garbage out." Too few people were trained well enough on the system, and many were loading bad data. That caused R/3 to spit out faulty reports.

Those reports are a vital part of managing the rapid growth of the 45-year-old park. De Efteling originally was a collection of sports fields built by two local priests for area youth.

It has since become a full-scale amusement park with more than 3 million visitors from April through October — much like a Dutch Knott's Berry Farm.

Visitors no longer play soccer but instead ride a quadruple-loop roller coaster, play golf at a newly opened course and stay at a new 120-room hotel.

And De Efteling's staff must use an R/3 system to manage

SAP R/3, page 54

• Java applet lets public take closer look at planet

You, too, can search for life on Mars

By Sharon Gaudin

EVERYONE AT Sun Microsystems, Inc. has been saying that Java is out of this world. Now it seems the technology may actually be getting pretty close.

NASA's Pathfinder lander module touched down on Mars on July 4 and started sending back photos from the surface of the red planet within 24 hours. NASA developers have been counting on a Java applet to send those pictures from a central database over the Internet to scientists and the curious public.

"The Java applet allows the public and our scientists to look at the photos from the mission," said Paul Backes, a technical group leader at NASA's Jet Propulsion Laboratory in Pasadena, Calif. "There is a 360-degree mosaic of images from the landing rover. Anyone can use their browser to download the applet, make a 3-D rover drive over a terrain map and take a closer look."



NASA's Java applet gives users a closer look at photos from the Mars Pathfinder mission

Sponsored by Sun, the World Wide Web site with the Java applet is at *mars.graham.com/wits*. The applet can be downloaded through a browser to give a user a tour of the surface of Mars. Photos from Mars have been available at the site for the past week.

Backes said he initially had some concerns — based on comments from critics — that Java wouldn't execute commands fast enough to handle the job. But days after the landing, speed hasn't been a problem, he said.

"Our first use of Java and the Internet to bring this information to the public is working out great," Backes said. "There would have been no other way to do it. Java is the enabling technology. Think of all the people who are experiencing Mars

Java applet, page 54

IBM brews Java tools

IBM last week announced the general availability of VisualAge for Java and a companion tool kit, VisualAge WebRunner. The firm also previewed a technology called Bean Dipping, which can add functionality to existing JavaBeans.

VisualAge for Java is a visual development environment for programmers who work in the Java object-oriented programming language. VisualAge WebRunner uses JavaBeans components, wizards and other tools to help novices build simple JavaBeans components.

The Bean Dipping technology would let developers add functionality such as licensing, security and network management capabilities to existing JavaBeans.

— Elizabeth Heichler, IDG News Service

SAP R/3 installation

CONTINUED FROM PAGE 53

the $65 million per year generated by those visitors.

Project leader Ijpelaar blamed much of the early R/3 struggles on a lack of testing and the fact that there wasn't enough memory to handle the volume of data loaded into the system. "There was much more data than we thought there would be," he said.

De Efteling staffers thought 16G bytes of extended memory on their Sun Microsystems, Inc. SPARC application server would be enough to handle the load. It lasted two weeks. "We are adding 1G byte each month," Ijpelaar said.

So the park's R/3 project team launched the "Tussenspint" program, Dutch for "in between run," a sort of in-flight repair job. Originally estimated at about $2 million, the project's cost shot up to about $3 million.

"We did training of the staff to make sure no rubbish was going into the system," Ijpelaar said. The Tussenspint also involved going through the data, tossing the bad and rearranging the good so the data was uniform throughout the system and could be used by operations analysts.

As of this year's opening day, all was running smoothly.

Barry Wilderman, an analyst at Meta Group, Inc. in Stamford, Conn., said De Efteling's experience demonstrates that such problems can be costly and can set projects back significantly. He said the key to avoiding such setbacks is testing.

"There's no rocket science here, but the key is to get the appropriate data and to simulate, simulate, simulate this stuff in a lab environment," Wilderman said. "You have to work hard to understand what your transaction volumes are."

The new system gives end users such as facilities manager Rob Papavoine more information than the legacy mainframe system — an IBM System/34 and System/36 that run 30 different applications with 60 interfaces.

A PRICE TO PAY

But Papavoine said the new ability to analyze data and better plan inventory — from staple items such as cotton candy tubes and cleaning fluid — didn't come without a price, namely time.

"To order one simple item [on the mainframe], within a minute we could have an order put out," Papavoine said. "Now, it takes five or six minutes, because we have more sophisticated data and we have to have a lot more input. It was disappointing in the beginning, but it's getting faster and faster as we get used to it."

Papavoine also said knowing why they are pouring in more data — specifically to get better output — makes it worthwhile. With the old system, for example, managers had no idea what was in stock at any given time.

"We didn't have official stock, but we had a lot of stock," Papavoine said. "We are already seeing a great advantage with the forecasting ability of R/3. But the information is only as good as the data put in. That's what we learned the first year."

Now, De Efteling staffers know exactly what they have on the shelves and what needs to be ordered. The result: Inventory has been cut in half. □

Eric Verweij, news editor at Infoworld Netherlands, *contributed to this story.*

Java applet allows views of Mars

CONTINUED FROM PAGE 53

because of Java."

Jim Ryan, a professor and astrophysicist at the University of New Hampshire in Durham, N.H., said viewing Mars photos over the Internet gives him and the public an amazing advantage over past experiences as NASA watchers.

"Back in 1969, we were all watching the lunar landing, and if you weren't right there at your TV at the right time, you missed it," Ryan said. "Now, I can log on to the Internet site a day later, or a week later, and I can still see what happened."

Ryan said the only difficulty he had was finding the Web site with the Java applet. He said it was tough to find the link from the official NASA page. He said he could link up only after he was given the site address.

Backes said clarifying the directions to the site is the only problem that needs to be fixed at this point.

The applet doesn't control anything on the actual mission, but only enables people to view the photos over the Internet, Backes noted.

The Pathfinder mission is actually a trial run for another Mars mission scheduled for 2001.

Because this mission is only expected to last about a week or two, most of the scientists involved can work out of the Pasadena laboratory.

But the mission scheduled for 2001 is expected to last about a year, so scientists will need to access information over the Internet so they can work from their home offices.

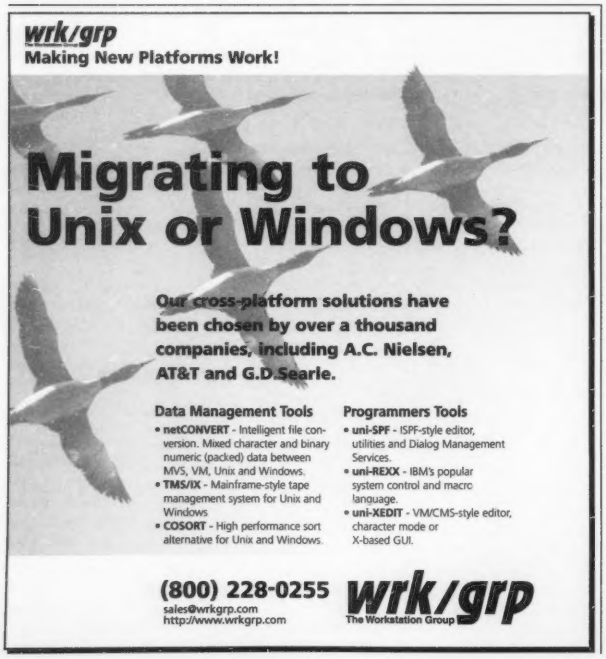
A list of Mars-related sites is available at the NASA home page (www.nasa.gov). The Web site discussed in this story is at mars.graham.com/wits.

"We went with Java because it's so easily deployed over the Internet," Backes said. "Before, when we needed to have remote scientists access photos, we'd have to send them all computers so we knew they were all running on the same platform. That would also mean that we'd have to do remote maintenance on all those machines."

Because Java is platform-independent, Backes said he doesn't have to worry about what platform his scientists are using. "We're going to spend a fraction of what was spent before. That way, there's no limit to the number of users we can have."

Heather Ashton, a research analyst at Hurwitz Group, Inc. in Newton, Mass., said the NASA experiment is a good example of putting Java to real business use.

"To be able to go up and grab the same information off the Internet — regardless of what platform you're on — is important to a lot of businesses," Ashton said. □



NEW PRODUCTS

TEXTWARE SOLUTIONS has announced Instant Text 2.0, a text abbreviation software system.

According to the Burlington, Mass., company, Version 2.0 was designed for casual users of word processing programs such as Microsoft Corp.'s Word or Lotus Development Corp.'s WordPro. Using a word or a phrase advisory, a typist can enter a few letters that are automatically expanded to whole words and complete phrases.

Instant Text 2.0 costs $99.

Textware Solutions
(617) 272-3200
www.twsolutions.com

INFORMATION ELECTRONICS, INC. has announced Eureka Gold, software that has artificial intelligence to determine whether electronic mail sent to a location is junk mail.

According to the St. Simons Island, Ga., company, Eureka Gold with Anti-Spam installs on E-mail servers. It was designed for high-volume installations, but company officials priced it for small enterprises. Anti-Spam definition updates are available for free.

Eureka Gold costs $1,000.

Information Electronics
(912) 638-1893
www.ie.com

SOFTKIT TECHNOLOGIES, INC. has announced Live Access, software that uses hyperlinks, visual content browsing and imaging to increase information retrieval abilities.

According to the Montreal company, users can link and access documents that reside anywhere in their computing environment, including the Internet. Using features called Live Guide and Live Space, users can create a custom hierarchy and link documents to drawings, maps and images.

Live Access costs $195.

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Briefs

Apple notebooks

Apple Computer, Inc. today is slated to announce refreshments to the 166-MHz model of its PowerBook 1400 notebooks and reduce the price of its 133-MHz version. Apple will add a 2G-byte hard drive and an eight-speed CD-ROM drive to the 1400C/166. It will cost $3,500. The 1400CS/133 will get a 1.36G-byte hard drive and an eight-speed CD-ROM drive. It is expected to cost $2,500. The midrange PowerBook 1400 line hasn't been changed since it was introduced late last year.

IBM ships chip

IBM is shipping its long-delayed PowerPC 604E chip. The chip was slated to ship in the second half of last year. It is a faster, lower-power version of the high-end PowerPC 604 chip. The 0.25-micron processor will have an initial clock speed of 250 MHz and will power Macintosh systems and Unix servers and desktops from IBM. Faster versions of the chip will be available later this summer, IBM officials said.

New Timberwolf

Storage Technology Corp. in Louisville, Colo., is shipping a multiplatform robotic tape library for data warehousing, imaging and broadcasting needs. The Timberwolf 9740 can store up to 25T bytes of data using high-capacity tape cartridges. Pricing starts at $68,000.

A lot of storage space

1991 storage requirements for Windows	11M bytes
1997 storage requirements for Windows 95	150M bytes
1991 storage requirements for graphics software	7M bytes
1997 storage requirements for graphics software	225M bytes

Source: Peripheral Research Corp., Santa Barbara, Calif.

First Union stays on top of growing data load

By Tim Ouellette

BACKING UP is hard to do.

At First Union National Bank, that means reining in data from an ever-growing herd of distributed servers.

"We don't really know which project is going to hit us next or with what [server platform]," said Robert Gardner, a systems engineer at the Charlotte, N.C., bank.



From left: Steve Plair, Robert Gardner and Kevin Mattingly are using SCH backup software to centralize and secure First Union's Unix servers and databases

SECURITY COMPROMISE

Like many companies across the country, First Union found that a rollout of distributed Unix servers can bring freedom from the mainframe but also can sacrifice the security and access to crucial data that the mainframe provided.

When the Unix servers were first introduced in early 1995, company officials didn't think they needed a comprehensive backup plan because they expected to install only about 30 servers in two years.

But now, less than two years into the project, Gardner and his staff manage and back up 2.5T bytes of data from more than 200 IBM AIX, Sun Microsystems, Inc. Solaris and Hewlett-Packard Co. HP-UX servers — with the prospect of 100 Windows NT servers going online in the next year.

Something had to be done because the move to distributed servers was part of a push to make the bank's computer network more amenable to the 2,000 branch offices spread throughout the country. The goal was more flexibility so First Union's 12 million customers could gain easier access to their account information.

So the bank turned to a software package from Cincinnati-based SCH Technologies, Inc. The package scales up to handle the influx of new systems and acts as a basis for other add-on

Bank, page 56

Sequent firms up its NUMA boxes

By Jaikumar Vijayan

USERS LURED by the scalability promise of Non-Uniform Memory Access (NUMA) architectures but wary of its relative newness in commercial environments may find some reassurance in a recent announcement from Sequent Computer Systems, Inc.

The Beaverton, Ore., vendor is adding features that give its NUMA servers, which first started shipping seven months ago, greater reliability, increased memory and more storage space.

NUMA technology is a performance-enhancing way of tying together small groups of processors into one large cluster of processors. For example, a 16-processor server can be arranged into a cluster of four nodes with four processors each.

The technique allows vendors to extend server scalability beyond the limits imposed by symmetrical multiprocessing (SMP) architectures. Although most SMP servers stop scaling effectively after 16 processors, Sequent's NUMA servers now handle up to 32 Intel Corp. processors and eventually will scale up to 252 processors.

ADDING MUSCLE TO NUMA

- Fiber-channel-based, high-availability clustering
- Up to 32 fiber-channel connections for enhanced storage access
- Very Large Memory support (up to 16G bytes of RAM)

By bringing high-availability clustering to NUMA, Sequent gives users a way to increase the reliability of their applications,

Sequent, page 57

GM tests wearable systems

▸ *Automaker hopes to nix return visits for fixes*

By Bob Wallace

GENERAL MOTORS CORP. next month will begin testing a portable, voice-controlled, multimedia computer that it hopes will help technicians correctly fix more vehicles on the first visit.

The hands-free Mentis system includes a small computer that can attach to a person's belt and a headset through which technicians talk to the computer and view the data it provides (see illustration). Mentis was designed to be a train-yourself system that uses simple menus and forward and back options to guide users through the information it contains.

"It's estimated that only 70% of civilian and military vehicles are fixed correctly the first time around," said Jim Roach, head of service technology research at GM in Detroit. "The rest are fixed with too many parts or need a return visit. Thirty percent is a big target to shoot at."



Interactive Solutions' Mentis System leaves mechanics' hands free to work on cars

The Mentis system is made by Interactive Solutions, Inc. in Sarasota, Fla., and was introduced last week. Although GM will be the first Mentis beta site, an aircraft maker and the U.S. Army National Guard, among

GM, page 57

Bank stays on top of growing data load

CONTINUED FROM PAGE 55

tools to do specific tasks for specific servers.

Called ReelBackup and ReelLibrarian, the software products let individual systems administrators send their crucial data to four tape drives in First Union's tape silo from Storage Technology Corp. in Louisville, Colo. The tape silo, located in the bank's Charlotte data center, also houses data from the mainframe, but ReelBackup can discern which drives are slated for client/server information.

"With the Reels products, you basically have a shell [doing backup], and then you have the capability to build additional tools around it to help you do specific things," Gardner said.

Backups now chew through 750 tape cartridges each weekend, estimates First Union's Robert Gardner. That's no problem for a product that targets high-end Unix backups.

For example, database administrator Steve Plair is integrating Autosys scheduling software from Platinum Technology, Inc. in Oakbrook Terrace, Ill., with the Reels products to monitor database and file-system backups and provide notification when backups are complete.

An important part of the up-front work for the client/server backup project was educating users on the importance of backing up their distributed data, then configuring the databases for proper backup with Reels, Gardner said.

He estimated that client/server backups now chew through 750 tape cartridges each weekend. But that's no problem for a product that targets high-end Unix backups.

ReelBackup "is particularly well-suited for backup of very large file systems such as multihundred-gigabyte databases that need online, hot backup," said a recent report by Strategic Research Corp. in Santa Barbara, Calif.

In fact, Gardner said the software is holding up well, but the tape hardware will need to be updated to handle the ever-growing load. The onus of managing so many different platforms rears its ugly head here, too, because tape hardware requires software drivers for each platform.

SCH is developing Reel add-ons aimed at backing up Oracle Corp., Informix Corp. and Sybase, Inc. databases and SAP AG's R/3 enterprise applications. □

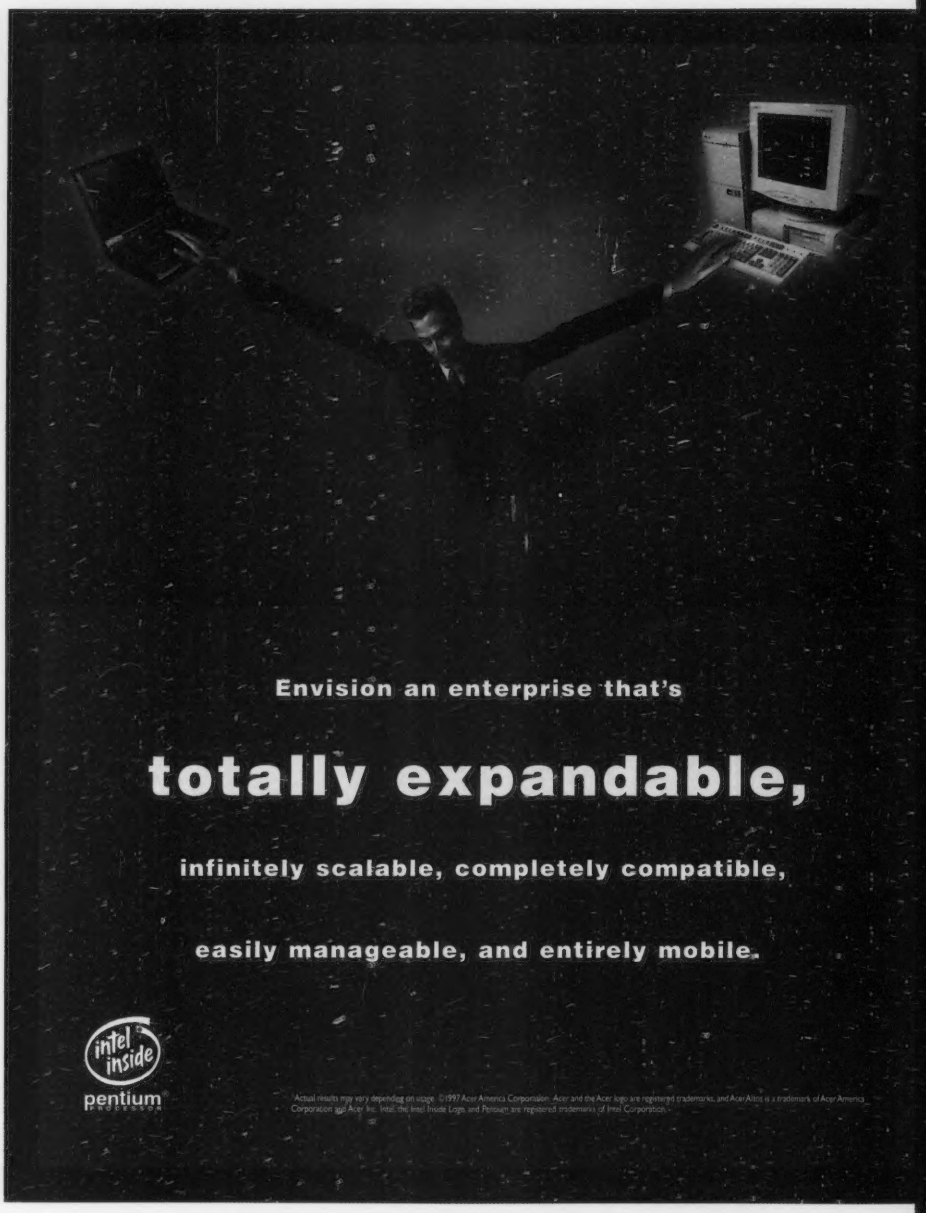
Toshiba takes foray into Pentium II arena

By April Jacobs

TOSHIBA AMERICA Information Systems, Inc. is jumping into the Pentium II market with a pricey, well-equipped commercial desktop.

The Irvine, Calif., computer maker's Equium 6260M is a high-end minitower configuration that features a 266-MHz Pentium II processor, 32M bytes of RAM, a 16-speed CD-ROM drive and support for Universal Serial Bus technology and three-dimensional graphics. It costs $2,799.

The computer is available now. It ships with Intel Corp.'s LANDesk Client Manager systems management software and Secure Sleep technology from Toshiba. Secure Sleep lets network managers access a system remotely — even when the system is turned off — by using an encrypted password to install or upgrade software on a client. □



GM tests wearable systems

CONTINUED FROM PAGE 55

others, have expressed interest in the system.

Information provided from Mentis can include full-motion video, CD-quality audio, three-dimensional animation, graphics and text. The technician dons the headset with an eyepiece and accesses information by using voice commands, which leaves his hands free to work on the car.

If the technician needs additional data, he can access local databases by using a wireless connection. Mentis soon will have a satellite uplink for use over long distances.

"The amount of information needed to fix motor vehicles is overwhelming," said Roach, who added that GM publishes 150,000 pages of repair procedures every year. "It'll be easier for technicians than lugging around huge repair manuals and spending the time needed to locate the appropriate information. A new process is needed because the old one just wasn't working."

Mentis "is a great productivity tool for many vertical industries." – Diana Hwang, IDC

Automakers and the military can use Mentis to keep pace with the advanced technology used in today's cars and tanks.

For example, a low-end Cavalier has four microprocessors, but a loaded Corvette has 12 processors used to run the car's instrument panel, air bag, engine and transmission, Roach said. "You need to have very high-technology systems to repair very high-technology vehicles."

Diana Hwang, an analyst at International Data Corp. (IDC) in Framingham, Mass., said wearable computers are still an emerging market, but Mentis "is a great productivity tool for many vertical industries." Mentis appears to be the first such system to offer multimedia support, she said.

The Pentium-based Mentis is about 1 in. thick and measures 7.5 in. by 5.5 in., which is about half the size of a laptop. It can be equipped with a flat-panel display and mounting gear. System prices range from about $3,699 to $8,000. □

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Sequent firms up NUMA servers

CONTINUED FROM PAGE 55

observers said. The company has introduced a fiber-channel-based interconnect technology that lets users link two NUMA servers in a high-availability cluster. In that setup, if one server goes down, the other automatically takes over.

The servers can be spaced as much as 10 km from one another, thereby providing users with disaster-tolerance and recovery capabilities, analysts said.

"It is good knowing that this kind of [high-availability] capability exists," said Ron Hawkins, director of technology at Millipore Corp. in Bedford, Mass.

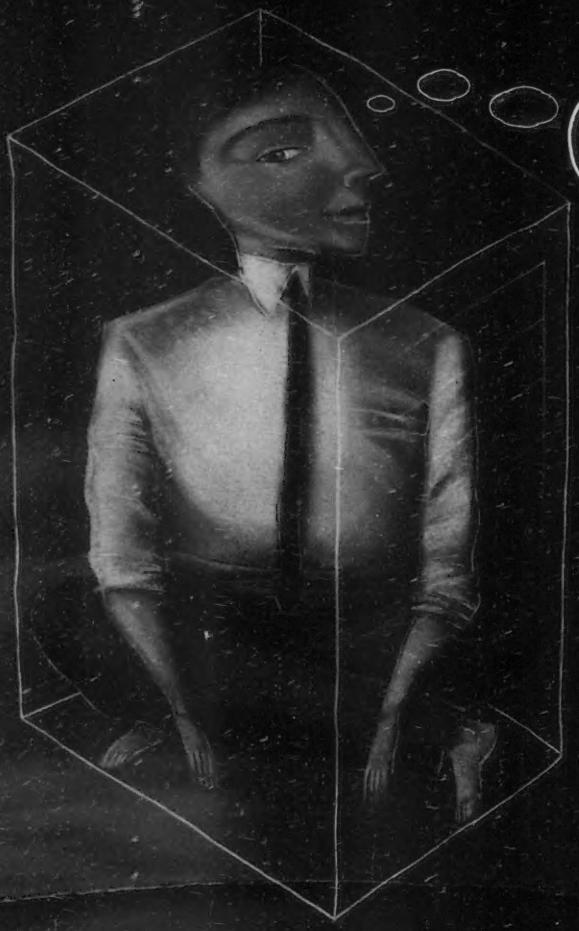
"But instant fail-over is not something I need right now in our business environment," he said. Millipore, which uses a Sequent NUMA server to run database applications, takes it down every Sunday for regular maintenance, he said.

NUMA SUPPORT

In addition, Sequent also announced support for up to 16G bytes of Very Large Memory support on its NUMA servers. That kind of memory capacity lets corporations run large applications — such as entire databases — directly on memory, thereby boosting performance.

Gary Smaby, CEO of Smaby Group, Inc. in Minneapolis, said Sequent's moves to build up on a highly scalable computer architecture are imperative.

"Because Sequent is a small company competing with giants in the server space, they need to aggressively push the performance envelope," Smaby said. □



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Manage the money!
To lower total ownership costs of your information systems, manage those costs better, Paul Strassmann writes. Page 62

Managing

CASHING in on YEAR 2000

You have a year 2000 problem and need some outside help. But be on guard! Some vendors are pushing magic fixes and overpriced help.



BOB WESTERBERG

BY ROBERT L. SCHEIER AND THOMAS L. HOFFMAN

THE PITCH WAS too good to be true.

At a year 2000 conference in December, Philip Murphy was approached by a slick-talking salesman who claimed his company could convert any program at the National Council on Compensation Insurance, Inc. (NCCI) in Boca Raton, Fla., for $100.

"It didn't matter whether the applications contained 3,000 lines of code or 300,000," said Murphy, manager of year 2000 compliance at NCCI, which provides workers' compensation statistics to insurance companies. "It sounded like a backyard operation run by Bubba and his three brothers."

Year 2000 speaker and consultant Peter de Jager remembers a conversation with a vendor representative who sought a product endorsement. The vendor told de Jager: "It doesn't matter how good this product is. If I can get even a little bit [of the market], I can make money." De Jager says he refuses to endorse any products.

Welcome to the sleazy side of the year 2000 industry: cashing in on what some hope will be a $600 billion market ensuring that information systems can recognize the year 2000 although they were written to recognize only two-digit year fields.

Many honest vendors are doing good work. But there are some employment agencies charging 35% premiums for year 2000 work, unknown companies cold-calling IS managers to pitch magic cures and offshore vendors bidding for work even though they have no staff to handle it.

Cashing in, page 60

CASHING in on YEAR 2000



CONTINUED FROM PAGE 59

Even reputable firms are raising eyebrows. One industry group sells year 2000 "certification" that doesn't guarantee anything will actually work. Insurers sell year 2000 policies that require costly audits and only cover companies that are well along in solving the problem. One chief information officer claims vendors use "terror tactics" to scare nontechnical CEOs into spending more than they should.

Sleazy vendors

One project manager at a financial services firm says the year 2000 is "magic" for contract programming agencies.

"As soon as I make the magic word happen," he says with a chuckle, "they want a 35% markup. We formed a tight alliance with our [human resources] department" to catch contracting agencies that previously offered the same programmers at lower prices for other work.

Lauris Nance, vice president and year 2000 project executive at business information services company Equifax, Inc. in Atlanta, says she's never seen as many cold calls as she receives for year 2000 tools.

Year 2000 Project Manager Jo Calk has learned to brush off claims of automated tools that will dramatically speed code conversion at Blackwell North America, Inc. in Lake Oswego, Ore. The firm sells books and services to libraries.

"A lot of the changes ... cannot be done globally through all their magic programs," Calk says. "It's down and dirty plugging through the code."

Stephanie T. Moore, an analyst at Giga Information Group in Westport, Conn., says she's turned up "hundreds of sleazy vendors" with big claims and shady backgrounds.

A year 2000 project manager at an East Coast manufacturing firm got a proposal from an Indian firm that said, "Currently, we have no employees, but I can get all of my family members together to do this project." It didn't get the contract.

TIPS:

▸ Be wary of claims that automated conversion software is 99% or 100% accurate, Moore says. A 65% success rate is more realistic.

▸ Beware low-ball pricing, such as $100 per program or 50 cents per line of code. Ask if such prices include software licensing, service or other fees.

Pushy vendors

"Need some year 2000 work done? Then make it worth my while."

That's the attitude many big service providers take with clients. Vendors tell customers, "If you only want to give me year 2000 work, that's not big enough," says Patrick McBride, vice president and service director at Meta Group, Inc., a market research firm in Stamford, Conn. Vendors are pressuring customers to also buy long-term maintenance or data center outsourcing, he says.

"We have never tried to hold [customers] hostage for our year 2000 services by requiring them to buy something else," says Dale Vecchio, marketing director at Viasoft, Inc.

Brian Keane, a senior vice president at Keane, Inc., an applications development, outsourcing and integration services firm in Boston, says it hasn't turned down work or pressured clients to buy extra services. But he says, "We would always give higher priority to a customer who combined the year 2000 project with an application outsourcing deal."

TIPS:

▸ Know which of your systems must be fixed and when, to help you push back against vendor pressure.

▸ Prepare a list of systems or functions you could outsource if required.

Want insurance?

Want to insure yourself against year 2000 losses? Try this plan from insurance broker J&H Marsh & McClennan, Inc. in New York, with auditing services from year 2000 tool vendor Ascent Logic, Inc. in San Jose, Calif., and the New York law firm LeBoeuf, Lamb, Greene & MacRae.

First, don't apply unless you have a well-established year 2000 plan written, says Ascent Logic President and CEO Larry McArthur.

Second, the standard policy won't cover damage caused by microprocessors within devices such as elevators or fire-control systems, says Jeff Jinnett, president of a joint venture formed by Ascent Logic and the law firm to perform the audits. Nor will it cover failures in a customer's or supplier's system, he says, unless that third party also undergoes a year 2000 audit.

Third, the customer must pass a series of audits — which can cost upward of $100,000 — of its year 2000 compliance. Finally, the customer pays about $35,000 for each major business unit to license software from Ascent Logic to generate audit data, McArthur says.

The policy remains in effect only as long as the customer passes quarterly audits, which cost $30,000 each. The policies, none of which has yet been issued, will cover up to $200 million in damages. Premiums are expected to cost several million dollars.

IS managers were skeptical of the insurance at a recent meeting of The Information Management Forum, an association of business and IS executives in Atlanta, says Managing Director Jim Jones.

The coverage limit is "a fraction of a day's run rate" for a large, multinational company, Jones says. And some executives considered it self-insurance "and they were self-insured for most things anyway."

Marsh & McClennan officials didn't return several calls seeking comment.

McArthur says the policies are probably most attractive to chief financial officers, spurred on by corporate lawyers and audit committees that fear lawsuits.

TIPS:

▸ Does the policy cover third-party damages or damages caused by embedded systems?

▸ How does the insurer determine if you're eligible for coverage?

▸ How much will you pay for audits, required software licenses or other associated costs?

Weak guarantees

One reason to buy year 2000 insurance is to prove to customers, shareholders and [if necessary] lawyers that you have a good year 2000 plan.

Hence the rise of certification programs, such as those run by the Information Technology Association of America (ITAA) in Arlington, Va. So far, about 30 companies have applied for and received the $6,200 certifications, which will rise to $8,200 on Aug. 1, says ITAA spokesman Bob Cohen.

But, as Cohen admits, the ITAA doesn't guarantee software written by or fixed by an ITAA-certified company will work in the year 2000. All it certifies is the process by which that company does its work.

Jones doesn't think the ITAA is doing anything wrong, but he says he's seen press coverage saying "that so and so products are certified by ITAA. That's clearly erroneous."

But one IS organization found ITAA certification enough to calm nervous customers. The audit "was also a very nice way to validate our own process," says Dan Lucas, systems development manager at Blackwell North America, Inc.

TIPS:

▸ Year 2000 certification may be less expensive than buying insurance, if your main goal is to prove you're working on your year 2000 problem.

▸ Get legal advice on how much protection certification actually buys you.

▸ If a vendor claims it or its product is "certified," ask exactly what is being certified and how the auditor defines "compliance."

Scheier is Computerworld*'s senior editor, management; Hoffman is senior editor, IS management.*

Silver bullet? You decide

Is there a cheap, easy way to fix year 2000 problems?

Silver Bullet Solutions (SBS) in New York claimed it has one, in a Usenet posting headlined "IBM Finds Silver Bullet for Year 2000 Problem in 'Garage-Door' Partnership." SBS co-partner John Foehl declined to say how the silver bullet works, how long SBS has been in business, who past customers are or who at IBM praised the company. An IBM spokesman declined comment, and Foehl said such details are "not relevant at this point" and will be shared only with potential partners until SBS inks a marketing deal.

The posting (comp.software.year-2000) quotes an unnamed IBM staffer as saying, "It sounds like you guys have the silver bullet." It also claims SBS can expand date fields from two to four digits without stopping the affected systems or running parallel software or hardware, while greatly minimizing testing.

Pressed for detail, Foehl said the methodology hasn't been used for year 2000 work, but only for an "analogous situation."

"I'm skeptical," said William Ulrich, president of the Tactical Strategy Group, Inc., a Soquel, Calif., consulting firm. With the high profile of year 2000 problems, he said, "Where have they been all this time?"

A World Wide Web search for Foehl's co-partner, John DiPetto, found that name listed as holder of SBS's post office box — which was in the Usenet posting — and describes him as host of *Everyday Miracles*, a show on a Manhattan public access cable television network.

Foehl declined comment on any connection between the cable show and SBS. DiPetto's number rang an answering machine whose message said: "This is Johnny Angel. To receive a free list of left- and right-brain characteristics, please leave a question about life or a comment about my show, *Everyday Miracles*." — Robert L. Scheier, assisted by Mitch Betts and Rick Saia

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65. Communications Systems/Public Utilities/Transportation
70. Mining/Construction/Petroleum/ Refining/Agriculture
80. Manufacturer of Computers, Computer-Related Systems or Peripherals
85. Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
90. Computer/Peripheral Dealer/Dist./ Retailer
95. Other_____ (Please Specify)

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21. Dir./Mgr. MIS Services, Information Center
22. Dir./Mgr. Network Sys., Data/Tele. Comm., LAN Mgr./PC Mgr., Tech. Planning, Administrative Services
23. Dir./Mgr. Sys. Development, System Architecture
31. Programming Management, Software Developers
41. Engineering, Scientific, R&D, Tech. Management
60. Sys. Integrators/VARs/Consulting Management

CORPORATE MANAGEMENT
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12. Vice President, Asst. Vice President
13. Treasurer, Controller, Financial Officer

DEPARTMENTAL MANAGEMENT
51. Sales & Mktg. Management
70. Medical, Legal, Accounting Mgt.

OTHER PROFESSIONAL MANAGEMENT
80. Information Centers/Libraries, Educators, Journalists, Students
90. Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply.)
Operating Systems
(a) Solaris (e) Mac OS
(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
App. Development Products ❒ Yes ❒ No
Networking Products ❒ Yes ❒ No
Intranet Products ❒ Yes ❒ No

4. Which of the following products do you buy, specify, recommend or approve the purchase of? (Check all that apply.)
(a) ❒ Internet software
(b) ❒ Internet browsers
(c) ❒ Web authoring/development tools

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60. Government - State/Federal/Local
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70. Mining/Construction/Petroleum/ Refining/Agriculture
80. Manufacturer of Computers, Computer-Related Systems or Peripherals
85. Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
90. Computer/Peripheral Dealer/Dist./ Retailer
95. Other_____ (Please Specify)

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IS/MIS/DP MANAGEMENT
19. Chief Information Officer/Vice President/Asst. VP IS/MIS/DP Management
21. Dir./Mgr. MIS Services, Information Center
22. Dir./Mgr. Network Sys., Data/Tele. Comm., LAN Mgr./PC Mgr., Tech. Planning, Administrative Services
23. Dir./Mgr. Sys. Development, System Architecture
31. Programming Management, Software Developers
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DEPARTMENTAL MANAGEMENT
51. Sales & Mktg. Management
70. Medical, Legal, Accounting Mgt.

OTHER PROFESSIONAL MANAGEMENT
80. Information Centers/Libraries, Educators, Journalists, Students
90. Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply.)
Operating Systems
(a) Solaris (e) Mac OS
(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
App. Development Products ❒ Yes ❒ No
Networking Products ❒ Yes ❒ No
Intranet Products ❒ Yes ❒ No

4. Which of the following products do you buy, specify, recommend or approve the purchase of? (Check all that apply.)
(a) ❒ Internet software
(b) ❒ Internet browsers
(c) ❒ Web authoring/development tools

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YEAR 2000 SCOREBOARD

An occasional series on year 2000 trends, issues and statistics

Offshore programmers: Low cost for long?

Don't count on offshore programmers to help you save as much money on year 2000 conversion work as you had hoped.

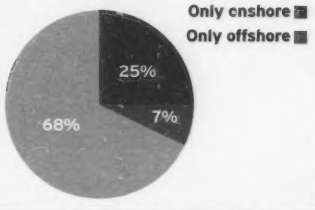
Costs are likely to increase because the offshore labor pool can't handle the demand, cautioned Howard Rubin, a software researcher and head of the computer science department at Hunter College in New York, in a presentation in May at DCI's Year 2000 Issues and Answers Conference in Boston sponsored by Digital Consulting, Inc.

Rubin said some of the most popular offshore targets — India, Canada and Ireland — don't have anywhere near the production capacity of the U.S. (Canada has the highest of the three at 9%, India has 5% and Ireland has 2%.)

Companies in India may charge less than their counterparts on the other side of the world, but their costs are rising, according to Satish Manchala, an executive at India-based information technology consultancy VJ Infosystems Ltd. Manchala says labor costs averaged less than $20 per hour last year, but they have risen slightly to a range of $15 to $25. But that's still less than the going rate in the U.S., which, he adds, is $55 to $65 per hour.

Where outside the U.S. can you get the highest quality work for a reasonable price? Rubin says Canada "might be the best place to go" because salaries are lower than in the U.S., but software workers are more productive. — Rick Saia

In a study of 112 companies for Cap Gemini Group, software researcher Howard Rubin found that use of offshore resources is a major element of many corporate year 2000 strategies:



Memo to staff: Drop what you're doing

Many IS managers worry that they'll have to postpone critical application development so they can devote money and people to their year 2000 problems. That's already happening at Bernard C. Harris Publishing, Inc., a Norfolk, Va., publisher of alumni directories.

The company has decided to call "all hands on deck" to quickly analyze the extent of its year 2000 problem, says project manager Janet Burns. "We could [have] put five people on it for five months or 20 people on it for two months," she says. Management opted for speed because the company still runs many older systems thought to be prone to year 2000 woes, and it isn't sure it can replace them by the end of 1999.

"If those projects didn't get going or weren't going to finish by 1999, we needed to figure out what we had to do now," Burns says. The year 2000 speedup has put virtually all new development on hold, she says, including the final phase of a client/server system designed to improve customer service.

Why this urgency when the company hasn't found any actual year 2000 bugs? Because "we definitely feel that if you don't address this, you're betting your business," Burns says. And if the year 2000 problems aren't too bad, work on the customer service system could resume by next month. — Robert L. Scheier

Showing, not telling, makes case

Having trouble delivering the year 2000 message to executives? Don't just talk about the problem — show them.

At Wheeling Pittsburgh Steel Corp. in Wheeling, W. Va., upper-level executives had to be convinced that the year 2000 would have a big impact on the steel manufacturer.

Early last year, they got the message — and Wheeling, well into the conversion process, expects all its systems to be year 2000-compliant by the end of next year.

The vice president of information systems, Tom Notaro, wanted to see "real-life" examples of how systems would be affected, says Dan Busack, director of software development at Wheeling.

Using Cobol Analyst 2000, an impact-analysis tool from SEEC, Inc. in Pittsburgh, IS set up several demonstrations of how the company could be affected. When one demo showed the potential impact on shipping, Busack said, executives took notice. The purchasing system demo revealed that the company wouldn't be able to order parts for delivery starting in January 2000. "The system just stopped," Busack says. "It wouldn't process those requirements." That, he adds, helped convince Notaro and line executives that they were facing a problem. — Rick Saia

Lessons from Leon

Looking for some ideas in implementing a year 2000 conversion plan? Leon Kappelman may have some for you in his new book: *Year 2000 Problem: Strategies and Solutions from the Fortune 100, or The Y2K Dragonslayer's Manual.*


Leon Kappelman

Kappelman, a professor of business computer information systems at the University of North Texas and co-chairman of the Society for Information Management's (SIM) International Year 2000 Working Group, has combined the works of more than 50 writers, authors, consultants and IS professionals to offer strategies, war stories, resources and more on the year 2000-conversion problem.

The book, published by International Thomson Computer Press (*www.itcpmedia.com*), is due on store shelves by Aug. 1, Kappelman says.

COMPUTERWORLD

This week on our World Wide Web site (*www.computerworld.com*), Stephanie T. Moore, an analyst at Giga Information Group, advises IS managers about potential land mines to look out for in the year 2000 market.

TO LOWER OWNERSHIP COSTS, MANAGE THEM BETTER

Are you worried about total ownership costs? Don't place your faith *only* on changing technology.

Replacing old PCs with network computers or switching operating systems is not the miraculous answer to the rising costs of computer networks. You'll save more money if you improve reliability and security and become a superb manager of the technology you have.

PAUL STRASSMANN



Until recently, we rarely heard much about the excessive cost of PCs, even though it can amount to as much as 40% of the salaries paid to PC users. Computer people kept quiet because they were preoccupied with obtaining money to buy hardware and software. Top managers only began to inquire about the full life-cycle cost of computing when they recognized that computer ownership increasingly includes costs that show up only in the users' operations.

Today, user-incurred costs such as "futzing" (wasting time on PCs), improvised learning, assistance from fellow employees and end-user attempts to become computer experts are showing up in the total ownership cost (TOC) estimates published by consultants and vendors.

DOWNTIME ESTIMATE

Still, something is missing. I have been bothered by the lack of any allowances in TOC calculations for the business consequences of network downtime [CW, Jan. 13]. Vendor claims and widely quoted consultant estimates don't include that. Yet, I have data that suggests that many networked PC users can't perform their essential business tasks for anywhere from two to four hours per month. Frequently, those disruptions can lower productivity and hurt revenue.

In business-critical applications, computer downtime equals the costs of idle labor. I recently completed a study of a network with 2,500 clients, 80 servers, 50 bridge/routers, 200 hubs and 160 printers.

The unplanned downtime for the clients was 1.6 hours per month per person. Throw in the interruptions caused by the servers, routers and hubs, and it added up to 2.8 hours. For the entire network, that was 84,000 hours of dysfunctional time per year. With user compensation averaging $32,000 per year, plus benefits, that could add up to a big waste of resources.

TOTAL COST OF OWNERSHIP MODEL

In revenue-creating applications, the losses from computer downtime can be even greater. According to a model from Interpose Corp., revenue losses per employee can equal several times an employee's hourly compensation for every hour of downtime.

Interpose in Altamonte Springs, Fla., (*www.interpose.com*) offers the most comprehensive software for estimating total ownership costs, including expenses that don't show up in the information technology budget. In addition to calculating hardware and software component costs, it also includes allowances for the following other IT expenses:

- Network management (such as troubleshooting and repair, performance tuning and user administration).
- Systems management (such as technology evaluation, licensing, asset management, network security and installation of upgrades).
- Storage management (such as storage capacity planning, backup and archiving, and disaster planning).
- User support (such as training, vendor liaison, equipment relocation, trouble diagnosis and help desk operations).

The model also includes losses in productivity attributable to end users as a cost of ownership, such as the following:

- Lost productivity and lost revenue from downtime. (The model estimates these losses from user-supplied data on such factors as salary, what portion of the person's time is critical, planned downtime, unplanned downtime, what portion of the population is affected and how mission-critical those people are.)
- Time spent in formal training.
- Cooperative training, when the user's peer interrupts work and offers tutoring.
- Casual training, such as learning from trial and error or by perusing a manual.
- The cost of correcting errors resulting from the inability to operate the system.
- The "futz factor" — the costs of users spending work hours using their PCs for entertainment and private purposes.

> PC users can't perform their essential business tasks for two to four hours per month.

THE DOWNTIME EFFECT

I ran the Interpose model for the network under study to calculate the average cost per client station, including all the standard cost elements listed above.

The effects calculated by the model were remarkable: Fully 48% of the $12,516 average cost per client could be attributed to the revenue lost by downtime. Other end-user inefficiencies would account for only 12% of the TOC. Futzing amounts to only 2.9% of the TOC.

Those results intrigued me. The key influences on TOC weren't the standard cost elements, but network reliability. I wanted to assess the value of the work that wasn't done because of downtime.

To estimate that value, I related it to the salary: the higher a user's salary, the higher the potential impact on revenue loss. That way, I assumed that the higher the compensation, the more likely is that person's effect on business outcomes. Salary also will be a measure of lost productivity in case that person can't function because the essential computer support collapsed.

I also examined the total ownership costs for the identical network, assuming it supported highly paid users (earning $90,000 a year).

The losses due to downtime were even higher. For highly paid analysts, using low-reliability networked PCs (where downtime was 3.2 hours per month), the average cost per client was $29,100. In this example, the costs of hardware and software would amount only to 8% of TOC! If these analysts were currency traders, and totally dependent on workstation uptime to conduct business, the TOC would be much higher and the importance of hardware and software much lower.

CIO IMPLICATIONS

Making technical choices about operating systems (OS2 vs. Unix vs. NT vs. Windows 95), hardware (PC, NC or NetPC) or various administrative schema (such as the Zero Administration Cost initiative) does not predetermine the financial impacts on organizations.

It's not technology, but management effectiveness that drives the total cost to an enterprise of using networked computers. Management can exercise the greatest influence on how an organization overcomes the revenue impact when networks fail to function. Only management can deliver reliability and responsiveness to customer needs. Identical servers supporting identical clients, using identical routers, hubs and printers, will show widely different TOCs depending on who uses them, the importance of the computers, how critical the applications are and the reliability of the networked services.

Top management is starting to ask questions about why overhead costs are up despite the introduction of supposedly inexpensive computer networks. This time around, it will not be prudent to offer yet another technological fix as the cure to bloated IT budgets and rising overhead costs. □

Paul Strassmann's (paul@strassmann.com) new book, The Squandered Computer, *singles out excessive total ownership costs as the most attractive target for immediate cost reductions.*

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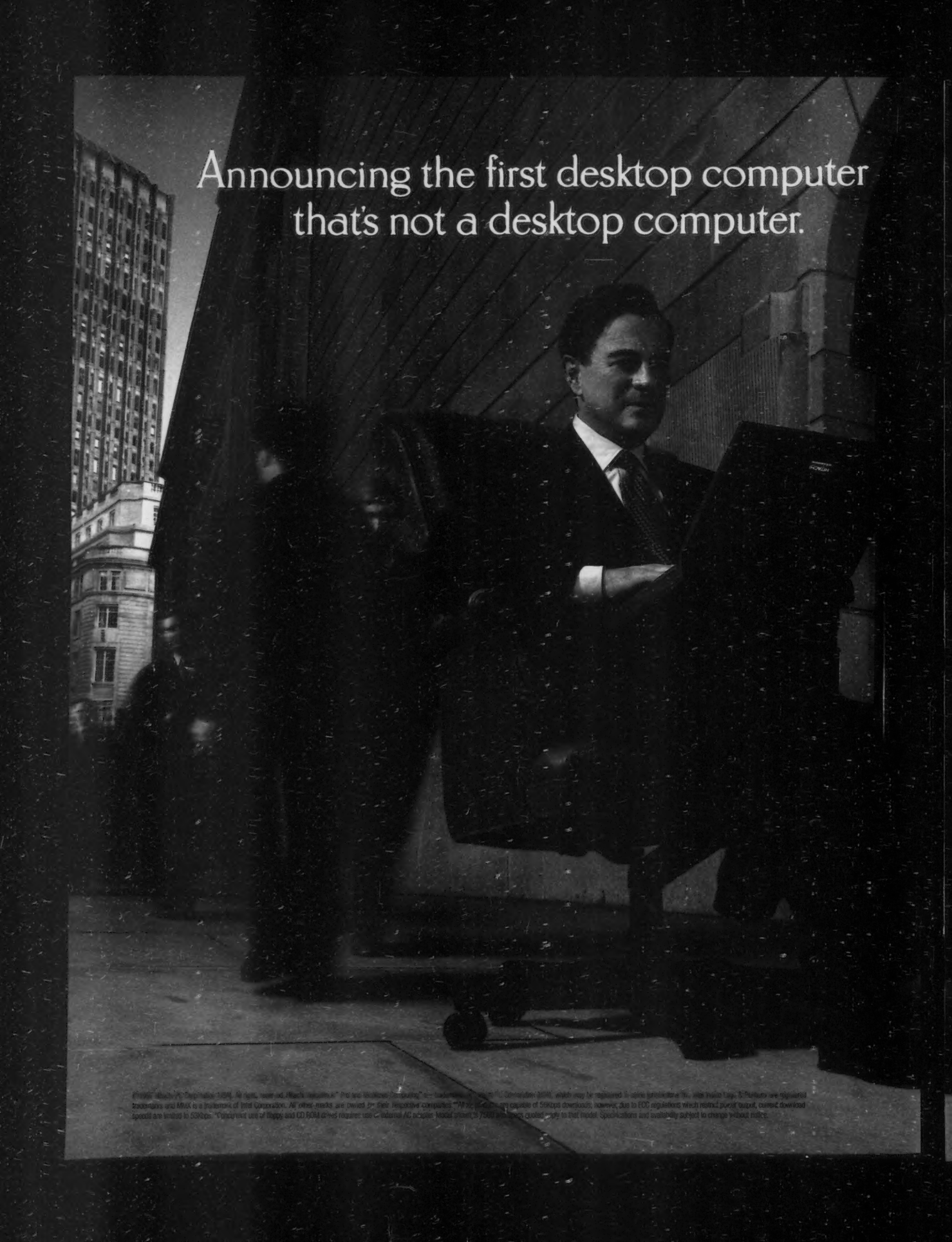
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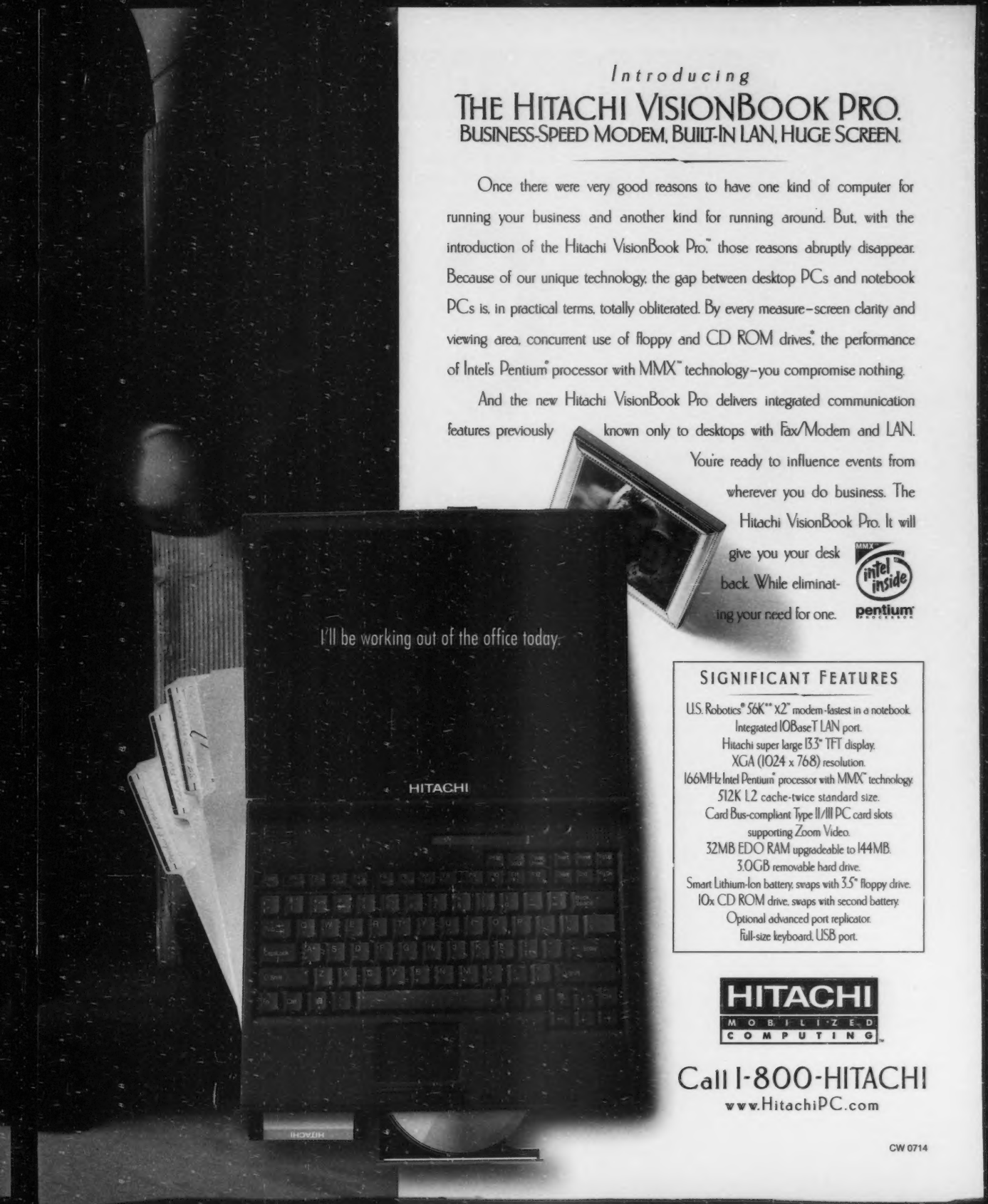
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Buyer's Guide

CUSTOMER SATISFACTION SURVEY:
IS managers want performance and quality, but they're tired of paying high prices for PCs and notebooks

CUT THE



HEIDI MESECHER

My brother-in-law works for a retail chain whose chaotic-looking stores are filled with clothes and household goods scavenged from other retailers' overstocks and closeouts. The corporate motto is simple: "Good stuff cheap."

Funny, that's exactly what PC buyers want, too. And they say vendors aren't offering any.

Computerworld's Customer Satisfaction Survey on PCs and notebook computers drew responses from 1,651 corporate sites, and the respondents spoke plainly. High prices stink. Performance, reliability, ease of configuration and quality all score fine (PCs keep users somewhat happier than notebooks in those areas), but the industry at large is charging too much. Or at least offering too little for those prices.

One irony is that for the past two years, vendors have been preaching about how they are reducing the total cost of ownership. That may have been just blather. Users often rated cost of ownership lower than service and support, which buyers historically have slammed in other *Computerworld* surveys.

When we asked buyers what they most wanted from their vendors, the answer was clear: lower prices. Yet "cheap" isn't good enough. Buyers want "good stuff," too. In the following pages, you will see that vendors such as Hewlett-Packard, Dell and Micron Electronics — which blend good prices with good marks in areas such as quality and reliability — score well in overall satisfaction. IBM, Toshiba America and Compaq, which also have good reputations for quality, performance and reliability, get dragged into the middle of the pack — or lower — because of user dissatisfaction with prices. — *James M. Connolly, technology evaluations editor*

DESKTOP SYSTEMS
– With prices so low, why the problem?

By Kevin Burden

THEY'RE POWERFUL, highly reliable (making vendor support more negligible), there are plenty of vendors to bid for your business, and the cost — well, we can always beef about cost.

Frankly, cost is what users are focusing on these days, according to *Computerworld*'s Customer Satisfaction Survey of 1,651 managers who purchase desktop systems.

COST

Users were asked to rate their satisfaction with their desktop systems and vendors in various categories pertaining to equipment quality, vendor image and cost issues.

Overall, users gave decent grades in most categories. For example, on a scale of 1 to 5, where 5 is "completely satisfied," users gave performance a mean score of 4.02 and reliability a mean score of 3.96. That shows users are generally happy with today's PC quality. And with a few exceptions, users are comfortable doing business with their vendors.

But moods changed when users were asked about price. System prices and overall cost of ownership received the lowest overall satisfaction grades of 12 categories, and it would have been worse if not for the relatively high scores for direct vendors such as Dell Computer Corp., Gateway 2000, Inc. and Micron Electronics, Inc.

But users did offer respectable grades on one money issue: value for the dollar. The industry as a whole scored a 3.74 rating, so users apparently don't feel they're getting ripped off. That may be because, given the performance of PCs, prices have never been lower, says John Dunkle, an analyst at Workgroup Strategic Services, Inc. in Portsmouth, N.H.

Still, it's clear that users feel that most vendors can do better on price. In a market where it's difficult to see the differences from box to box, price gets the attention. "And people don't feel they're getting anything extra by paying higher prices to nondirect vendors like IBM and Compaq [Computer Corp.]," says Laurie McCabe, an analyst at Summit Strategies, Inc. in Boston. "System reliability is such that users don't see much value in paying premiums for superior support."

But whether they sell direct or through reseller channels, all vendors have managed to maintain pricing levels even though raw power keeps getting less expensive. And that is why users complain about PC prices, Dunkle says.

Price per MIPS is dropping, but vendors consistently add to the systems' subcomponent level to maintain a higher price value. "With more memory, more storage, better monitors, video RAM, etc., PCs won't get cheaper as long as vendors continue to build up their baseline systems," Dunkle says.

More PC for the same money doesn't necessarily seem bad, but consistently increasing the standard configuration is why desktops are fully amortized in just 2.2 years, according to Dunkle's research. "Users want protection from price erosion," he says.

Bruce Broll, information systems supervisor at Altec Industries, Inc. in St. Joseph, Mo., says just buying the right system for the job is the best insulation he's found against depreciation. "We still have some 486s running all the software those people will ever need. Buying top of the line to prolong system life doesn't work for us since it means we're probably buying more system than we need, and time will eventually catch up," he says.

The most obvious strategy is to get the best price you can, which may mean buying direct. But if you're hesitant about moving away from vendors you've considered to be business partners, look at the overall satisfaction scores, and see which vendors best satisfy corporate users. They are Dell, Hewlett-Packard Co., Gateway and Micron. Three sell direct — HP doesn't — and can often bid at least 10% below vendors such as IBM and Compaq.

MORE RELIABLE

Greg Martin, director of IS at Arnot Ogden Medical Center in Elmira, N.Y., who once exclusively bought from Compaq because of its reputation for reliability, says he is less concerned with reliability than in the past. "We haven't seen much of a difference since we started experimenting with Dell and Acer [America Corp.]. My focus now is which vendor can give me the best price break."

As for paying premium prices to get better service, Martin says it's not worth it for him. "We're using vendor service much less, given what reliability is today. That's why it's getting harder for Compaq and IBM to differentiate themselves to us," he says.

Support grades show that users don't necessarily sacrifice service by choosing direct-sales vendors. HP's grades are extremely strong, as their history shows, but the next best are Dell's and Gateway's. "This is probably the industry's best-kept secret," Dunkle says. "All our research says the abilities of their technicians to do remote diagnostics is out-

Desktop systems, page 68

BUYERS RATE THEIR PC VENDORS

Means/totals on all charts may not tally correctly because of rounding.	Response base	TECHNOLOGY: Performance	TECHNOLOGY: Reliability	TECHNOLOGY: Configuration	COSTS: Quality	COSTS: Service and support
Acer	32	3.97	3.87	3.80	3.74	3.52
Apple	173	4.04	3.99	(4.34)	(4.05)	3.70
AST	55	3.77	3.85	3.70	3.81	3.54
Compaq	598	4.02	3.99	3.75	3.92	3.61
Dell	402	4.15	4.08	3.99	4.01	3.77
Digital	80	3.92	3.89	3.66	3.92	3.58
Gateway	329	4.07	3.93	3.94	4.00	3.66
HP	217	(4.18)	(4.13)	3.94	4.03	(3.83)
IBM	356	3.85	3.90	3.66	3.80	3.62
Micron	81	4.17	3.97	4.01	4.00	3.60
Total/mean	2,765	4.02	3.96	3.88	3.94	3.67

Based on a scale of 1 to 5, where 1 is "not at all satisfied," and 5 is "completely satisfied." High grade in each category is denoted with a ( ). Ratings can't be projected to the installed base at large.



DESKTOP SYSTEMS

CONTINUED FROM PAGE 67

standing." Because all vendors received higher user satisfaction grades for their own support compared with what is offered through the vendor's channels, users really aren't giving up much by going direct. "I don't need anyone to show up, just someone on the other end of the line that can take care of me. And that's what I have with Gateway," Broll says.

Probably the best evidence that price is fast becoming everything is a question in the survey that asked which vendor the user would prefer if price wasn't a factor. The top two in order: Compaq and IBM.

Although neither scored best in any category, they still would be the favorites if they didn't cost so much. "That makes total sense," Dunkle says. "There is a degree of safety when you buy from these vendors. Safety that comes at a price people like to complain about, but a level of safety people prefer." □

Burden is Computerworld*'s senior researcher, Buyer's Guide.*

PC VENDORS AT A GLANCE

Respondents rated their satisfaction with various aspects of their desktop and notebook vendors on a scale of 1 to 5, where 1 is "not at all satisfied," and 5 is "completely satisfied." Ratings reflect only the views of the survey respondents and can't be projected to the installed base at large. Standard error of the means when it is factored in can affect the vendor order. Vendors are listed from highest to lowest customer satisfaction.

Hewlett-Packard – HP not only scored one of the highest grades for overall satisfaction, but it also scored highest in six out of 10 categories.

Dell – Tied HP for the top spot in overall satisfaction.

Gateway – Gateway ranks higher on price and value than other vendors such as Dell and Micron, which notoriously compete on value.

Micron – Very strong in performance and has a technical direction its users favor.

Compaq – Users are comfortable dealing with Compaq as a vendor but didn't gush with satisfaction when grading their systems.

Apple – Mostly mediocre grades, but it excels and scores the highest in ease of configuration and quality.

Digital – Received grades that were down the middle in nearly every category.

Acer – Very few Acer users responded to the survey and didn't award any grades to brag about, either.

IBM – Scored lowest for price and value and came close to having the worst overall satisfaction grade of the survey.

AST – The lowest overall satisfaction of the survey.

THE REST OF THE FIELD

There is another group of PC vendors tiered differently in this survey because of their relatively low response bases. Some are on their way up in the market, such as Micron Electronics. Others may be on their way down or just floundering, such as AST Research, Inc. and Acer. And still others survive through a loyal following, including Apple and Digital Equipment Corp.

Apple was the only vendor in this second tier with more than 100 users responding to the survey. Apple has always been a different breed; though it never seems to fit in a Windows-based PC comparison, the high satisfaction of its users can't be ignored.

Apple actually scores among the highest grades of the survey in the technology categories, especially for ease of configuration and quality. But when it comes to cost, Apple users complain louder than other PC users.

Micron's reputation for driving performance at great prices built it a brand equity that people associated with superpower users, according to John Dunkle, an analyst at Workgroup Strategic Services. "Now that people understand Micron is available at a fair price, it's been doing very well," he says.

Micron's price scores are right in line with price-conscious Dell, but with an edge in performance.

Acer's overall satisfaction is below the survey mean. But even worse, there is a sizable gap between its price satisfaction, which is among the highest, and its value-for-the-dollar score. "We call this 'after-sale satisfaction' and with Acer, it's not good," Dunkle says.

AST scored the lowest overall satisfaction of this small group of vendors and of the total survey.

"They have way too many strikes against them. It's very unlikely they'll get any momentum back," says Laurie McCabe, an analyst at Summit Strategies. — Kevin Burden

BUYERS RATE THEIR PC VENDORS

	COSTS			IMAGE			
	Price	Value	Cost of ownership	Vendor reputation	Technical direction	Comfort with vendor	Overall satisfaction
Acer	3.80	3.67	3.63	3.73	3.77	3.62	3.69
Apple	3.37	3.63	3.66	3.85	3.52	3.67	3.73
AST	3.77	3.70	3.67	3.67	3.60	3.67	3.64
Compaq	3.40	3.52	3.47	4.13	3.99	3.96	3.82
Dell	3.90	3.94	3.84	4.12	4.05	4.04	(3.98)
Digital	3.19	3.45	3.36	3.93	3.84	3.79	3.71
Gateway	(4.07)	(4.06)	(3.95)	4.03	3.94	3.96	3.93
HP	3.60	3.81	3.74	(4.29)	(4.13)	(4.14)	(3.98)
IBM	3.16	3.29	3.28	3.99	3.75	3.73	3.67
Micron	3.89	3.87	3.78	4.14	4.10	4.03	3.88
Mean	3.66	3.74	3.67	4.00	3.89	3.89	3.84

Based on a scale of 1 to 5, where 1 is "not at all satisfied," and 5 is "completely satisfied." High grade in each category is denoted with a ( ). Ratings can't be projected to the installed base at large.

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☐ 101–500 ☐ 500+

No. of workstations you intend to purchase in the next 12 mos.:

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☐ 101–200 ☐ 201–500 ☐ 500+

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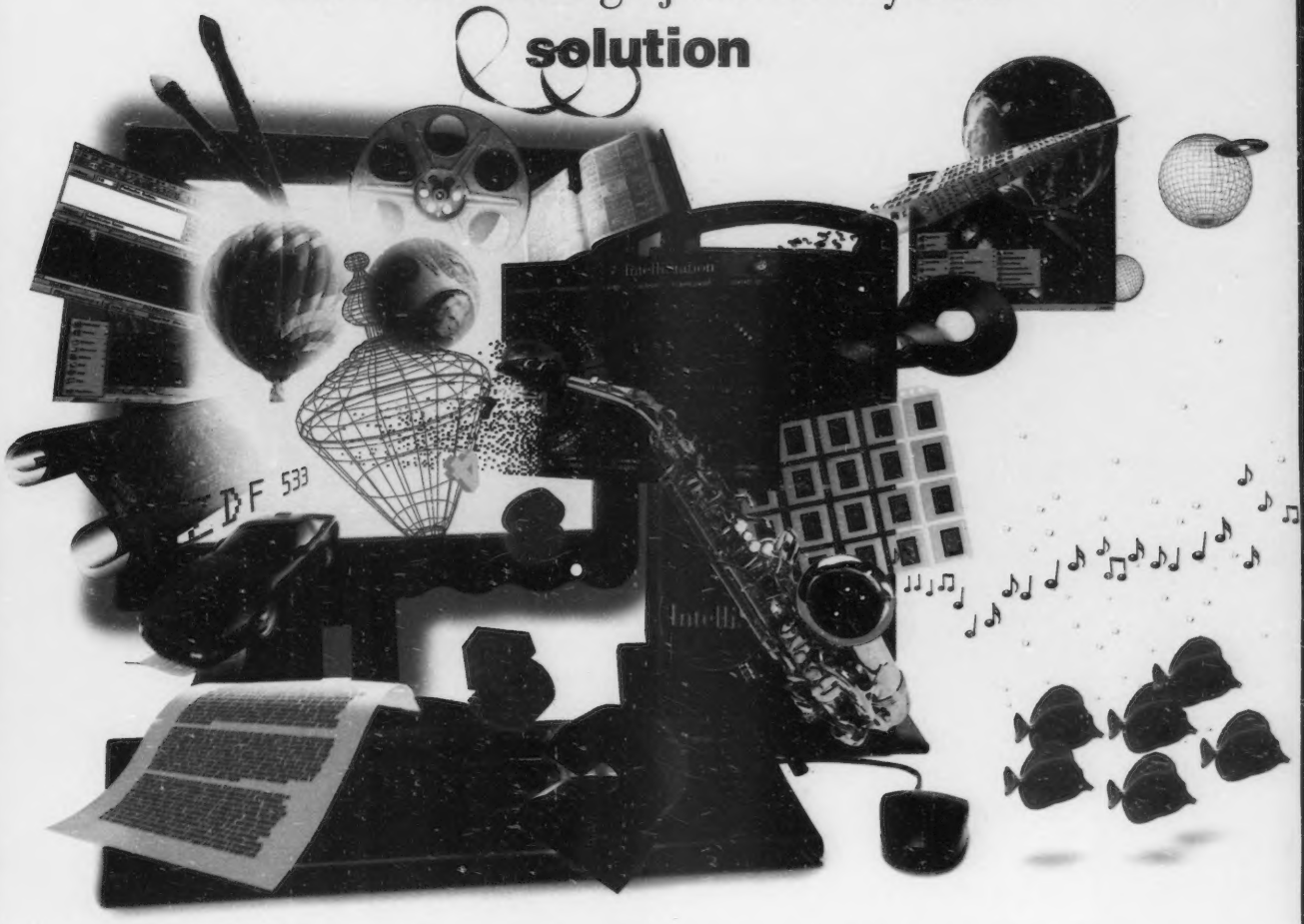
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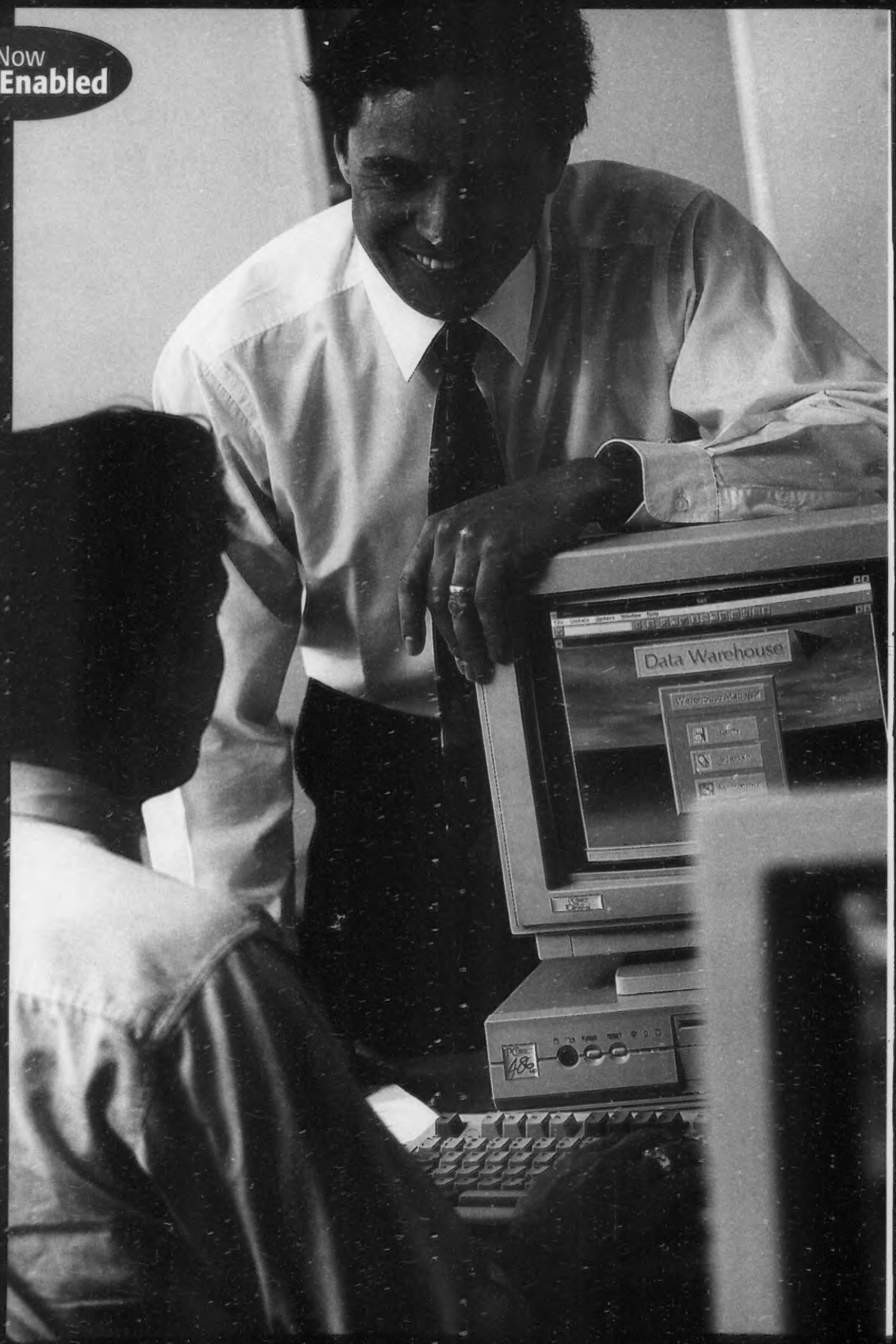
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NOTEBOOK COMPUTERS

Ferraris and diamonds on tuna casserole budgets?

By Cathleen Gagne

WE ALL WANT the best — and there are certain things for which we expect to pay top dollar. Then there are certain prices that people just can't come to grips with. Take notebook computers: People want portables to do it all, but it galls them to shell out the bucks.

Computerworld cast a mail survey to 4,000 information systems sites and received 1,651 responses. The responses voiced a clear, collective cry from users demanding that vendors cut their costs. And users aren't going to settle for less support and poor quality just to get those cut-rate prices; they expect their notebooks to work and that vendors will stand by their products.

MORE SATISFACTION

The results show that users overall were most satisfied with Hewlett-Packard Co., Dell Computer Corp. and Micron Electronics, Inc. They were the least pleased with AST Research, Inc., NEC Computer Systems and Compaq Computer Corp. Companies that fell in the middle include Gateway 2000, Inc., Toshiba America Information Systems, Inc., Apple Computer, Inc. and IBM.

Dell and Micron, both telephone-order vendors, scored the highest in price, value and cost of ownership, and HP scored big on vendor image issues and service and support. NEC and AST didn't fare well in any category. Compaq scored steadily in many categories but sank in price, value, hardware quality and reliability.

Analysts acknowledge that part of the user dissatisfaction may simply be that notebooks are so much more expensive than desktop machines that offer the same performance.

"Considering that we're paying about twice what we could pay for a desktop, this is frustrating," says Jon Penot, IT/IS manager at Health Plan Southeast in Tallahassee, Fla.

Analysts also say notebooks today cost less than ever. So complaining users don't appear to get a lot of sympathy.

"I don't know what users are expecting. I would say notebook [prices] are at an all-time low for what you get," says Ken Dulaney, vice president of mobile computing at Gartner Group, Inc. in San Jose, Calif.

Prices may not come down for a while, either, analysts project. "For vendors to drop the price, it's really a big problem because there are more things that have to go into the notebook," says Rob Enderle, area director at Giga Information Group in San Jose. For example, the desktop machine is sold without a display, and it is integrated with the notebook. "You can get pretty sloppy with the implementation of the desktop system, and it'll still look and work all right. With a notebook, if you get sloppy, you've got heat problems and service problems, and it all goes back into cost," he says.

When we tried to pin down several survey participants on exactly what bothered them about notebook price and value, they registered vague responses or drifted in other directions to plead for better support or quality assurance from vendors. It appeared that the problem may not be the price, but what you get for that price.

For example, Carin Barbanel, a senior desktop publisher at Ambac Indemnity Corp. in New York, says the price of her company's Compaq machines would be worth it if the vendor would "give us insurance that the case will not crack and replace it for a year or two years if it does ... and offer user manuals." She also found Compaq to be inflexible when it came down to negotiation. "I would have expected them to throw in more service," she says.

USER FEAR

Although the survey shouts of user unhappiness with price, users also are afraid of getting burned by buying less-expensive machines.

"You definitely get what you pay for," says Penot of lower-priced notebooks. Health Plan Southeast buys from Gateway primarily because of its competitive prices, he says. But he acknowledges that this short-term tack has backfired on him in the long haul. "When we've called because a battery pack has completely died and won't recharge, Gateway's answer is typically, 'We don't make these anymore.

NOTEBOOK VENDORS AT A GLANCE

Vendors are listed from highest to lowest customer satisfaction.

Hewlett-Packard – Not a market leader, but this vendor manages to grab the highest marks in many categories.

Dell – Our survey indicates that this vendor is used by more users in value-priced and midrange categories.

Micron – This lesser-known vendor scores the highest marks in most of the technical categories.

Gateway – Steady marks throughout the survey puts it in fourth place overall.

Toshiba – Survey indicates support problems; analysts say it's had a checkered history in that area.

Apple – Areas of most concern to Apple users are price, value and comfort with vendor.

IBM – Company is getting stomped on price, value and cost of ownership.

Compaq – This vendor placed third from last in hardware quality, reliability and ruggedness. It also placed second from last for screen quality.

NEC – Users are most troubled by performance, reliability, hardware quality, vendor reputation, technical direction and the cost of ownership.

AST – Scored flat-out last in almost every category, except pricing areas.

BUYERS RATE THEIR NOTEBOOK VENDORS

	Response base	TECHNOLOGY					
		Performance	Reliability	Ruggedness	Screen quality	Hardware quality	Service and support
Apple	130	3.79	3.84	3.84	3.84	3.85	3.67
AST	70	3.53	3.33	3.36	3.47	3.44	3.25
Compaq	369	3.77	3.71	3.64	3.69	3.69	3.58
Dell	261	4.03	(3.97)	3.97	3.96	3.92	3.81
Gateway	125	3.82	3.74	3.68	3.77	3.71	3.65
HP	52	4.02	3.90	3.83	4.00	4.00	(3.96)
IBM	428	3.83	3.82	3.72	3.86	3.78	3.65
Micron	43	(4.17)	3.95	(4.00)	(4.17)	(4.08)	3.72
NEC	86	3.73	3.66	3.62	3.88	3.65	3.49
Toshiba	485	3.88	3.77	3.73	3.87	3.81	3.48
Total/mean	2,256	3.84	3.76	3.71	3.82	3.77	3.59

Based on a scale of 1 to 5, where 1 is "not at all satisfied," and 5 is "completely satisfied." High grade in each category is denoted with a ( ). Ratings can't be projected to the installed base at large.

You have to buy a whole new computer.'" He says this translates into a value issue because "they aren't supporting what they originally sold you."

Penot says his company also uses IBM notebooks, which he prefers over the Gateway line. But he has a major gripe with IBM on price. "We're spending about $4,000 per laptop but can get the same thing from Dell or Gateway for $2,900. But IBM's trade-off is better support," he says.

Penot says he's now fighting for more IBMs, using the argument that "we can throw away a machine after six months if it breaks or we can pay more and get repair service/support with IBM. In the long run, IBM is a better value."

But based on the survey numbers, Penot may be in a minority. The scores from IBM's 428 users placed it last in price, value and cost of ownership categories.

IBM users are clearly unhappy with the price. Conversely, when our survey asked all the respondents, "If price weren't a factor, what vendor would you choose?" they put IBM in the top spot.

"Does everyone want notebooks to cost $500? Sure," Dulaney says. He also notes that people tend to purchase more than they need in a notebook.

He says IS departments may be buying high-end machines so everyone can get every possible feature and to hedge against being left behind on future enhancements. "But in fact, those machines are not going to pay out the way IS thinks they are. High-end machines have things like MPEG, which is still undefined and has not been useful, and zoom video and other technologies that I consider immature," Dulaney says.

He suggests IS managers reexamine their clients' usage patterns and tailor their machines more closely to what they really need to save money. □

Gagne is Computerworld*'s senior editor, Buyer's Guide.*

OTHER SURVEY HIGHLIGHTS

SERVICE AND SUPPORT

Given that Hewlett-Packard, Dell and Micron placed highest in overall user satisfaction, it's no surprise they grabbed the highest marks in service and support. The three also placed first in overall satisfaction, so it seems fitting that they would support their customers well.

But take note that three out of the four vendors that ranked highest in overall customer satisfaction are phone-order vendors — Dell, Micron and Gateway. One analyst thinks there's a connection.

"Why they're doing well has to do with customer support," according to Ken Dulaney, vice president of mobile computing at Gartner Group. Dell, Micron and Gateway's motto is to sell direct, so they don't have as much overhead and can put much more into customer service, he says.

Placing middle to last in service and support are AST, Toshiba, NEC, Compaq and IBM.

Dulaney says users may be indicating less satisfaction with some vendors because they're dealing through resellers, which can cloud the perception of a vendor.

"For example, I consider IBM to have excellent support, but what you may be seeing is the support ratings of the third parties," Dulaney says.

Toshiba, which has a large market presence, has had serious support problems, particularly with its 500 series, analysts say. "Because they are the largest in marketshare ... they had severe shortages in parts," says Rob Enderle, area director at Giga Information Group.

TECHNOLOGY

Micron, HP and Dell again posted top scores in areas of performance, hardware quality, reliability and screen quality. Apple knocked HP out of third place for ruggedness and system compatibility, with Micron and Dell took first and second place, respectively.

"Micron has always performed flawlessly in terms of product in my experience," Enderle says.

Falling in the last two spots in almost every technology category were AST and NEC, which also had relatively few responses. Compaq and Gateway scored poorly, just ahead of AST and NEC throughout those areas.

"We've put Compaq on problem watch at Gartner," Dulaney says. They've tracked problems in overall hardware quality and overall reliability of their systems.

VENDOR IMAGE

The low scorers in categories such as vendor reputation, technical direction, credibility and comfort with vendor were AST, NEC and Apple.

"NEC has a communication problem," Enderle says. "Their boxes have been reasonably robust, but we are talking about a vendor that has never really been able to communicate well with the domestic base here. They have just not done a good job creating a comfort level."

Apple's low scores may be because of "management changes, technology snafus and the inability to move the Mac," says Mike McGuire, senior analyst of mobile computing at Dataquest in San Jose, Calif.

And just take a guess who scored highest in all the vendor image categories. Yup, you got it: HP, Micron and Dell, the companies that scored so well throughout the entire survey.

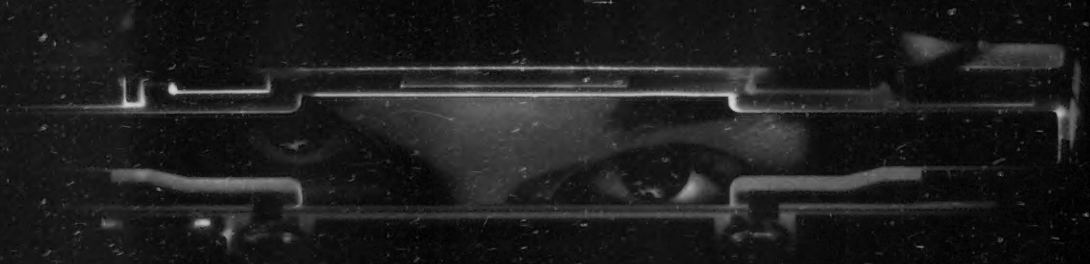
— Cathleen Gagne

BUYERS RATE THEIR NOTEBOOK VENDORS

	COSTS			IMAGE			
	Price	Value	Cost of ownership	Vendor reputation	Technical direction	Comfort	Overall satisfaction
Apple	3.07	3.30	3.40	3.83	3.61	3.61	3.72
AST	3.42	3.44	3.34	3.36	3.28	3.33	3.32
Compaq	3.27	3.35	3.35	3.99	3.88	3.84	3.66
Dell	3.66	3.75	3.73	4.10	4.03	4.00	3.95
Gateway	3.75	3.69	3.65	3.89	3.90	3.87	3.77
HP	3.67	3.73	3.70	4.27	4.08	4.11	3.96
IBM	2.94	3.17	3.17	4.00	3.88	3.81	3.69
Micron	3.62	3.73	3.71	4.05	4.11	4.03	3.92
NEC	3.31	3.35	3.31	3.81	3.57	3.69	3.49
Toshiba	3.47	3.53	3.48	3.94	3.84	3.80	3.73
Mean	3.36	3.45	3.43	3.92	3.82	3.78	3.70

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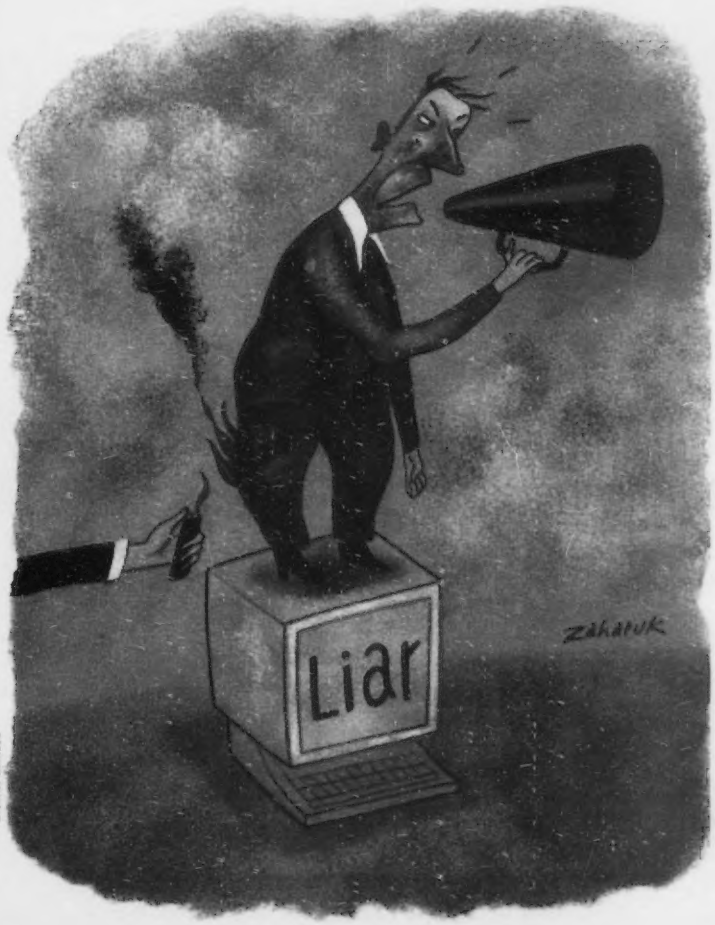
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In Depth

Lies, damn lies and the Internet

These days, everybody's an instant publisher. And much of what's published is slanted, malicious or downright libelous. What are people saying about YOUR company in cyberspace?

BY STEVE ULFELDER



MICHAEL ZAHARUK

At 2:00 a.m. on the day after Thanksgiving 1995, Ed Goldgehn of Marietta, Ga., went out to his driveway just in time to watch his Ford Ranger pickup burn to a twisted shell.

In the weeks that followed, Goldgehn and his wife, Debra, came to believe they'd been misled by Ford Motor Co. about the safety of the Ranger's ignition switch, especially when the company recalled Canadian vehicles after similar fires.

The Goldgehns didn't get mad. They got a Web site.

It's *www.flamingfords.com*, and a lot of people say it spurred a recall of 8.7 million cars and trucks in the U.S. that will cost Ford $200 million to $300 million, according to dealership figures.

Pundits say the beauty of the Internet is that anyone can be an instant publisher. The downside is that anyone can run a smear campaign full of libelous information that reaches millions of people in seconds. There are no editors or safeguards to ensure that 'net information is fair and factual.

The misinformation, disinformation and rumors posted daily on Internet Usenet groups and World Wide Web pages cost corporations money. A company can spend millions of dollars trying to repair its reputation in court, for example. Everywhere you look in cyberspace, disgruntled consumers, interest groups and competitors are bad-mouthing some company. Sears, Roebuck and Co., General Electric Co., AT&T Corp., MCI Communications Corp., Kmart Corp. and Wal-Mart Stores, Inc. have all been hit. Companies that fail to monitor Internet traffic may be headed for a public-relations disaster (see story, page 77).

Internet misinformation takes many forms: reckless Usenet flames, rogue Web sites and parodies, outright fraud and, of course, urban legends, the rumors that refuse to die. Urban legends existed long before the Internet, as anybody who ever sat around a campfire bull session can attest. But there are tens of millions of people around this particular fire, and too many of them are as gullible as a kid at camp.

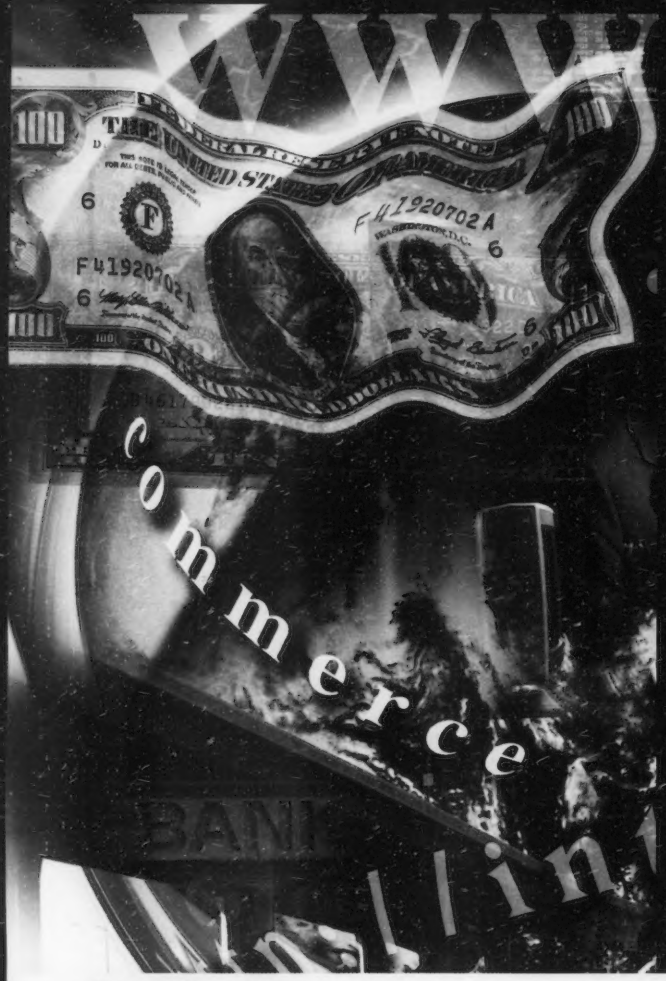
Tommy Hilfiger Corp. was burned recently. The publicly traded clothing manufacturer, which reported $662 million in revenue for fiscal 1997, was the victim of an Internet fable that spread like wildfire. The way the rumor went, designer Hilfiger appeared on *The Oprah Winfrey Show* and made racist comments about several groups, after which he was tossed off the set by Winfrey. (As all urban legends do, this one mutated; as it circled the globe, Hilfiger's comments were alleged to have been made on several other television shows.)

The rumor dates to at least late last year, but once it hit Usenet this spring, it took off. It appeared in many newsgroups, including alt.rap, rec.music.hip-hop and soc.culture.filipino, usually accompanied by a call to boycott the designer.

Lies, damn lies and the Internet, Page 77

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Lies, damn lies and the Internet

CONTINUED FROM PAGE 75

The rumor was utterly false. Hilfiger has never appeared on or taped an episode of Winfrey's show. But the legend spread so rapidly and generated so much controversy among customers and potential customers that New York-based Hilfiger was compelled to respond on the 'net.

The company isn't alone. McDonald's Corp. in Oak Brook, Ill., just won a U.K. libel case after spending an estimated $16 million fighting it over a seven-year period. In a series of pamphlets, two vegetarians accused the fast-food company of everything from eradication of the world's jungles to abuse of teen-age employees.

The pamphleteering began before the rise of the Web, but the Internet was a major factor in the dissemination of the material. An organization called McSpotlight has a slick site (with mirror sites on several continents) that calls itself "The biggest, loudest, most read Anti-McDonald's extravaganza the world has ever seen."

The day after McDonald's prevailed in court, McSpotlight used its site (*www.mcspotlight.org*) to mock the verdict and call the anti-McDonald's campaign "unstoppable."

For its expensive, lengthy effort (including 313 days of testimony), McDonald's was awarded the equivalent of $94,000.

In the McDonald's and Hilfiger cases, the information on the Web was nearly all demonstrably false (the British judge did hold a few of the anti-McDonald's charges to be true). The case of the flaming Fords provides a more complex example, in which spin and gray areas come into play.

Early last year, the Goldgehns created the Association of Flaming Ford Owners, whose major draw was and is the Web site. "I don't consider it a Ford slam site," Ed Goldgehn says. But the home page features a picture of his burned-out truck against a background of fireballs. And although 8.7 million Fords eventually were recalled, the home page headline screams, "What caused this truck to burst into flames could happen to any of 26 million other Ford vehicles in the U.S. and Canada!"

Here grassroots activism, misinformation and old-fashioned spin-doctoring blur and shift. Ford's recall must be read as an admission of a problem. And flamingfords.com has been credited by *The New York Times* and CNN as a catalyst for the recall. Moreover, as Ed Goldgehn points out, the page includes nonpejorative resources such as press releases, lists of Ford dealerships and a description of the malfunction.

But the headline overstates the number of recalled vehicles by almost 300%. It tells Ford owners that if they park in a garage, they are "endangering your life and the life of your family." And it includes information on class-action lawsuits.

For its part, Ford hasn't gone online to combat flamingfords.com. "Anything we'd do on our own site would validate what these people are saying," says Ford spokeswoman Joy Wolfe in Dearborn, Mich. She says Internet expressions of customer dissatisfaction are "no different than people writing letters to the editor or painting lemons on their car and driving it around the dealership."

But many public relations experts disagree with Ford and Wolfe. Vehemently.

Unity Stoakes is one of them. "To not respond on the 'net is incompetent," says Stoakes, who is an Internet communications specialist at Middleberg Interactive, the Internet and new-media division of New York public relations firm Middleberg & Associates. "It may border on negligence."

Stoakes and others say Ford and most other large corporations — long adept at protecting their image in traditional media — haven't adapted to Internet communication. "The 'net is vastly different," says Michael Velasco, a communications consultant at Chicago-based New Millennium Consulting Group. "It's much higher speed. It's two-way."

Stoakes says, "When a customer types 'Ford' [in a search engine], they get this flaming Ford site. We would suggest a rebutting statement from the chairman at Ford's own site."

Velasco says the situation should dictate strategy. "Sometimes you need to respond," he says. "Sometimes the [Usenet] conversation will police itself."

Tommy Hilfiger didn't wait. According to company spokeswoman Ruth Pachman, "As soon as the misinformation was brought to our attention," the company posted a statement to the appropriate newsgroups denying the allegations. The tactic worked, Pachman says, producing "immediate results." A look through the affected newsgroups confirms that the rumor has slowed to a trickle. And when somebody does post it, a 'netizen invariably posts the denial in response.

Although most Internet rumors appear to result from a newbie's ignorance or a cheesed-off customer, this is a ripe area for industrial espionage. All one needs is a shill with an electronic-mail account to plant falsehoods in the proper newsgroups, and *voila*: a competitor faces a costly, embarrassing media ordeal, and perhaps a lousy fiscal quarter or two.

Has it happened? "I've seen it happen," Stoakes says, although he declines to name names. "A company gets a couple of people — maybe one on each coast — to start a Usenet thread with a rumor about a competitor." He says small companies are more likely to play these dirty tricks than large corporations.

If you think your company couldn't possibly be the target of a 'net smear campaign, think again. Plug in the name of your company or best-known product at the Usenet search engine DejaNews (*www.dejanews.com*), and you may be in for a rude surprise.

Plug in "Disney," for example, and you'll see messages such as "Disney is anti-family" and "Gunowners: Join Baptist boycott of Disney!" There's even a whole Usenet newsgroup devoted to blasts at Walt Disney Co. It's called alt.disney.criticism. How convenient.□

Ulfelder is Computerworld*'s senior editor, In Depth. His Internet address is steve_ulfelder@cw.com.*

Internet PR disaster plan

The following are unedited message headers pulled from a recent random surf through Usenet newsgroups:

Best Buy is Consumer Unfriendly! (and Wal-Mart too!)
CompUSA and lousy service contract
DON'T BUY CHEVROLET!
First Union Screws Loyal Customers
AT&T Deceptive Practices — KNOW THE FACTS!
Help — MCI is trying to rob me of $318!
NATIONS BANK A SORRY INSTITUTION
BEWARE OF GE MICROWAVES
This Just In! Microsoft Officly Sucks!

Do you know what people are saying about your company in cyberspace? Too many organizations don't, according to Unity Stoakes, an Internet communications specialist at Middleberg Interactive.

"I was just at a crisis communications conference," Stoakes says. "Four huge companies were presenting on major crises, and not one of them addressed the 'net." (The companies were Pepsico, Inc., Texaco, Inc., The Prudential Insurance Company of America and The Hearst Corp.)

You need to monitor your business' standing on the Internet and be prepared to respond should something such as the recent Tommy Hilfiger disaster befall you. Here are some steps to take:

Know the turf. Familiarize yourself with the newsgroups, mailing lists, chat rooms and Web sites in which your organization is discussed. That way, if misinformation spreads, you'll know where and how to respond.

Don't underestimate. Stoakes advises treating Internet misinformation like a true media crisis, responding thoroughly and immediately. But that's a controversial point in the public relations community (see main story).

Go to the source. Stoakes says it's imperative to try to reach the individual or organization that launches the attack. "Establish a dialogue," he says. "Document everything."

Mind your manners. When you respond to an attack, follow the rules of 'netiquette. Use private E-mail before you send a message to a newsgroup. Don't cross-post unnecessarily. Even if you find the telephone numbers of the attackers, don't call them if you can possibly help it. A phone call will seem like a ham-fisted threat and will be immediately described and mocked on the 'net.

Prepare a contingency Web site. Middleberg helps clients set up a template so that if disaster strikes, they can quickly tell their side of the story and provide links and facts to the media.

Muzzle your mouthpiece. Stoakes says lawyers should be used as a last resort. He calls this the "David and Goliath syndrome." Nothing raises the hackles of the 'net faster than a legal threat. — *Steve Ulfelder*

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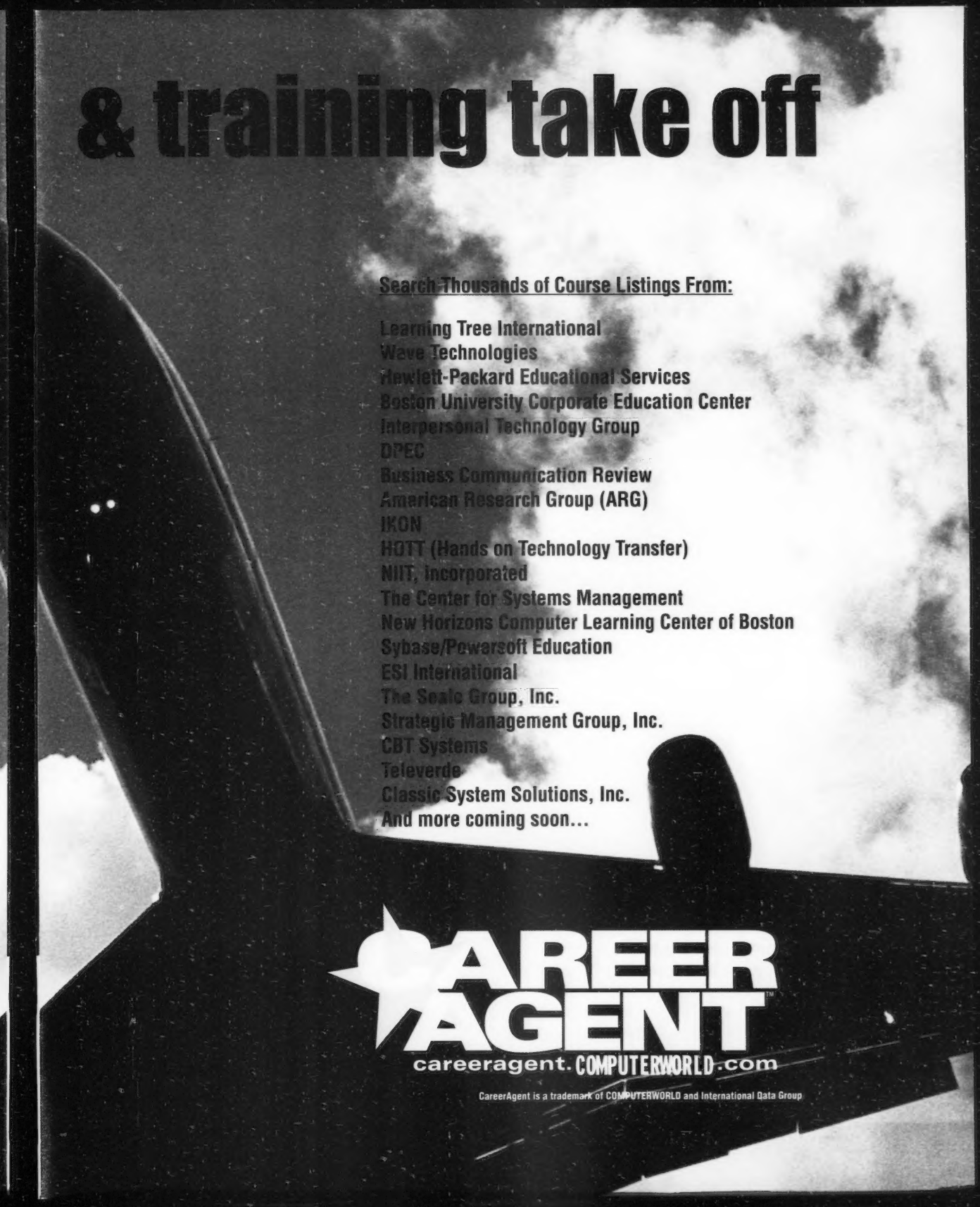
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IT Careers

One year later, meet the IS class of 1996. They're ambitious. They're savvy — both in business and technical realms. They know what they want. And they've got the chutzpah to go for it.

By Alice LaPlante

NEWBIES with ATTITUDE



KATHERINE LAMBERT

Jessica Lowe chose IS consulting to broaden her technology and business skills

Peter Troost was definitely an exception.

Like most of his fellow 1996 graduates from MIT's celebrated Sloan School of Management in Cambridge, Mass., Troost was besieged with job offers. They poured in from global management consulting firms, hot Internet start-ups and blue-chip technology companies that were looking for MBAs to specialize in information systems management.

But unlike most of his classmates, Troost chose a traditional corporate IS job — as a project manager at The Gillette Co. in Boston.

"Virtually everyone else went into consulting," Troost recalls about the recruiting frenzy of a year ago. "They definitely thought I was 'unusual' for making the decision I did."

Troost's reasons for accepting a position at Gillette centered on long-term career and lifestyle goals. With an eye toward moving up the ranks of IS to senior management — chief information officer or chief knowledge officer — Troost had enough real-world experience to evaluate all the available choices.

Troost says he loved working with technology. He'd spent three years doing so at The Travelers in Hartford, Conn., after receiving his bachelor's degree in 1991. But he knew enough from his days in the IS trenches that he was more interested in the business aspects of IS than the hands-on programming. Troost says he wanted to immerse himself in challenging and varied work experiences. And after spending the previous summer interning at an IS consulting firm, he knew *that* life wasn't for him.

"I didn't like the travel or the long hours," Troost says. "I had just gotten married, and I didn't want to be away from home all the time. And I believe in a healthy balance of work with personal interests. Gillette offered me all those things and more."

Troost's attitude is typical of the members of the Class of 1996. Although many chose the consulting route, all are well-versed in both business and technology. And they know what they want from their careers.

Each 1996 graduate *Computerworld* spoke with offers the following universal advice to those pursuing an IS career path: Ask questions. Be picky. And know you're sitting pretty.

CONSULTING TRACK

Like most management IS majors who graduated last year from the University of Minnesota, Jessica Lowe had her pick of job offers. And like an increasing number of her fellow graduates, she chose a consulting firm rather than a traditional corporate IS shop — in her case, American Management Systems (AMS) in Fairfax, Va.

Lowe says she felt AMS promised her the best opportunity to learn new technologies and expand her business knowledge.

She says her expectations have been more than satisfied.

Since joining AMS, Lowe has completed two major projects.

One was a client/server application that monitors permits for waste water for Minnesota's Pollution Control Agency. Lowe was responsible for development and testing on that project.

Lowe is currently helping Shell Oil Co. convert a mainframe-based document management system that tracks Occupational Safety and Health Administration guidelines to a client/server architecture. She has been involved with everything from design to development and is about to move toward testing the project.

"It's been very exciting, actually going out into the field and seeing how the technology we're building is affecting people and businesses," Lowe says.

VARIETY OF EXPERIENCES

Jason Wainstein chose his job as a systems analyst at Deloitte & Touche Consulting Group for similar reasons. "I wanted the most varied experience I could get — not just in different technologies, but in different company cultures and industries," he says.

According to Wainstein, new IS graduates are "in the lucky position of having choices. It's your responsibility to make the best and most-educated decision."

A 1996 computer science graduate from the University of Pittsburgh, Wainstein interviewed with more than 10 consulting firms before he eventually chose Deloitte & Touche. "They offered the most autonomy and the most responsibility early on," he says.

Since joining the New York-based financial consulting firm, Wainstein has been working on "Oregon Access," a customized client/server development project for the state of Oregon's Department of Human Resources. He has written a 300-page, five-year planning document, conducted requirements-gathering sessions with users and has run release-system testing. He's done some programming in PowerBuilder and Sybase, Inc. databases, but the actual hands-on coding has been "on the lighter side," he says.

Since Wainstein lives in Philadelphia and his job assignment is in Salem, Ore., "it's been an intense commute," he admits. But he says Deloitte & Touche has been extraordinarily accommodating; he lives in a corporate apartment in Oregon during the week and has the option to fly home on weekends or have his girlfriend fly out to visit.

"At this point, I'm very comfortable with it," Wainstein says of the intensive travel. "I don't have children. I don't have a lot of ties. And I like seeing all the different cities and states."

At Deloitte & Touche, Wainstein is heavily involved in the National Analyst Program, a recent multipronged development initiative. The program was designed to help entry-level business and systems analysts navigate successful careers at the company. This includes formal training programs and quarterly meetings with analysts worldwide.

It also includes mentoring programs to make sure new hires get the career advice they need so they can become full-fledged consultants by the end of their third year of employment. At that point, program participants can go back to school for an MBA — if they're endorsed by a senior member of the firm. "They provide the money and the laptop," says Wainstein, who intends to pursue this educational benefit.

TRAINING COURSES

Like her classmates, Jody Lembo interviewed with more than 10 prospective employers and received multiple job offers.

What made her choose Detroit Edison Co. was the superior training offered to selected new IS hires. She received her bachelor's degree in business administration, with a major in management IS, in 1996 from Central Michigan University in Mount Pleasant, Mich. "If you've got a technical degree, you're in demand. Remember that, and don't jump too quickly at that first offer," she says.

Lembo was specifically attracted to the utility's two-year "Professional Opportunities Program" that will rotate her through key IS departments and provide myriad internal and external training courses.

At the end of her two years, a professional mentor (assigned to her when she joined the company) will help her decide on a suitable permanent assignment.

Lembo's first rotation was supporting networked electronic-mail and calendaring applications; another rotation (her favorite thus far) was as a Unix systems administrator.

"Although I knew I wanted a career in IS, I really wasn't sure what I wanted to do," Lembo says. "I figured that two years in the working world getting a chance to try different things was the perfect opportunity to find out."

Among other training opportunities, Detroit Edison is paying for Lembo to earn her MBA through part-time classes at Wayne State University.

FINAL WORDS OF WISDOM

Most 1996 graduates felt well-prepared by their academic institutions for the IS working world. But nothing, they say, beats on-the-job experience — particularly with regard to teamwork. Which means that a No. 1 priority of all current students should be to pick up basic business skills and get an internship.

"Everyone has a different way of loading a Unix system. Detroit Edison does it one way; Chrysler does it another way. There's no way your college can teach that sort of thing," Lembo says. But she says Central Michigan did an excellent job preparing her for the fact that in the working world today, everything is done on teams.

"It's been said a million times, but an internship is essential," Wainstein says. "The most valuable thing you can do is immerse yourself in the real world."

Troost says he found that "generalist" business knowledge such as activity-based costing, economics and basic negotiation concepts were essential. In his MBA program, where he could choose his IS "electives" and required course work, he chose to take some advanced classes in "managerial communications," which focused on presentation, workshop facilitation and persuasion skills.

"I've found these sorts of things are what can make the difference between whether you succeed or fail," Troost says. □

LaPlante is a freelance writer in Woodside, Calif.

A GREAT PACKAGE DEAL

Just about any recent management IS graduate will glowingly preach the benefits of securing an IT internship while still in school. But Demmye Booras, who last year earned an MBA with an information-management concentration from the University of Texas in Austin, offers compelling proof.

A GREAT JOB

Booras' position as a senior business applications analyst at Federal Express Corp. came as a result of a summer internship she held at the international shipping titan during the summer of 1995.

"A lot of us interns from last summer came back as permanent employees," Booras says. This happened in one of the hottest job markets for IS workers in history, and among multiple firms that vied for the graduates' services. Why FedEx? "The people are great, the work exciting and challenging," she says.

One of the main attractions of the new FedEx applications development facility, constructed last year in Las Colinas, Texas (just outside the Dallas metropolitan area), is the opportunity to build a business and technology culture from scratch, Booras says.

Although headquartered in Memphis, FedEx opened the Texas facility to help lure top-notch IT professionals to a centrally located and technically vibrant site that would focus on new product development. Some applications will still be developed at the Memphis IT hub, where all ongoing maintenance of existing FedEx information systems will also take place.

"Because this is a new site, we're all deeply involved in making important basic decisions about organization and infrastructure and are otherwise helping build the culture from the ground up," Booras says. She has spent the past year participating in intensive recruiting activities to staff the new IT development center. She also worked on cross-functional teams to solve the operational challenges of getting a new site up and running.

Booras visited Memphis several times to tour the facilities and become familiar with her IS counterparts there. She also makes frequent site trips to other FedEx facilities and to customer sites. Last year, during the busy Christmas season, she rolled up her sleeves like everyone else at FedEx and pitched in sorting packages. "I now have a thorough grounding in operations," she says.

"I wanted to set down roots. And I very much enjoy building long-term working relationships with people."
– Demmye Booras, FedEx

Booras has been given the opportunity for as much technical training as she needs, including Notes development classes, Java seminars "and pretty much anything [else] I ask for," she says.

Besides the technological challenges, Booras says it was working with the FedEx staffers that ultimately made her decide to accept the offer. "I wanted to set down roots. And I very much enjoy building long-term working relationships with people," says Booras, who rejected several high-paying IT consulting jobs.

As for long-term career goals, Booras says, "I'm the wrong person to ask." One of the reasons she went with FedEx was that they promised her the chance to play a variety of technology-management roles.

"There are so many opportunities for those of us who have both technical and business skills," Booras says. "I'm just now seeing all the possibilities."

— Alice LaPlante

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Multimedia technology expert Frank DeMartin looks at the job opportunities in this growing field. Visit our careers Web site at *www.computerworld.com/careers.*

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Language Support Specialist Requires 3-5 years' experience with troubleshooting and problem resolution on OpenVMS and software layered products, primarily ACMS, C, C++, DCE, PL/1 and POSIX. Experience with ADA, BASIC, CICS, COBOL, RTR, FORTE, FORTRAN, Datatrieve and DECset would be beneficial.

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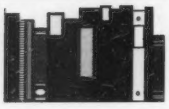
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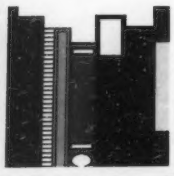
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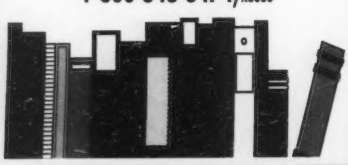
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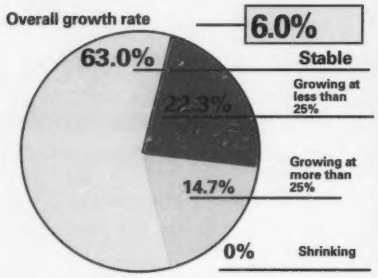
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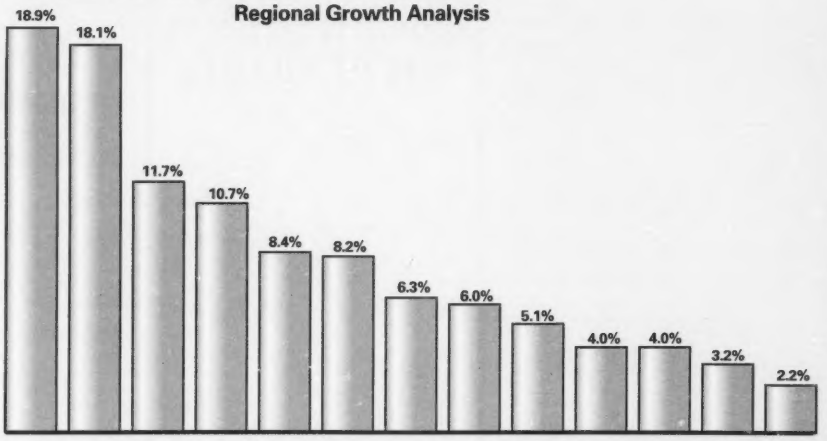


Survey Base: 211 Technology Firms involved in Photonics

Survey conducted between April '97 and June '97

CorpTech, a directory publisher in Woburn, Mass., tracks the U.S. 45,000 technology manufacturers. This survey relates to the 31,327 tracked firms with fewer than 1,000 employees.

Regional Growth Analysis



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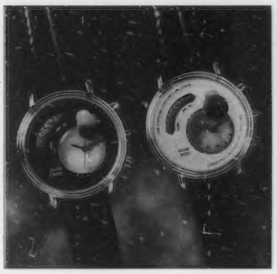
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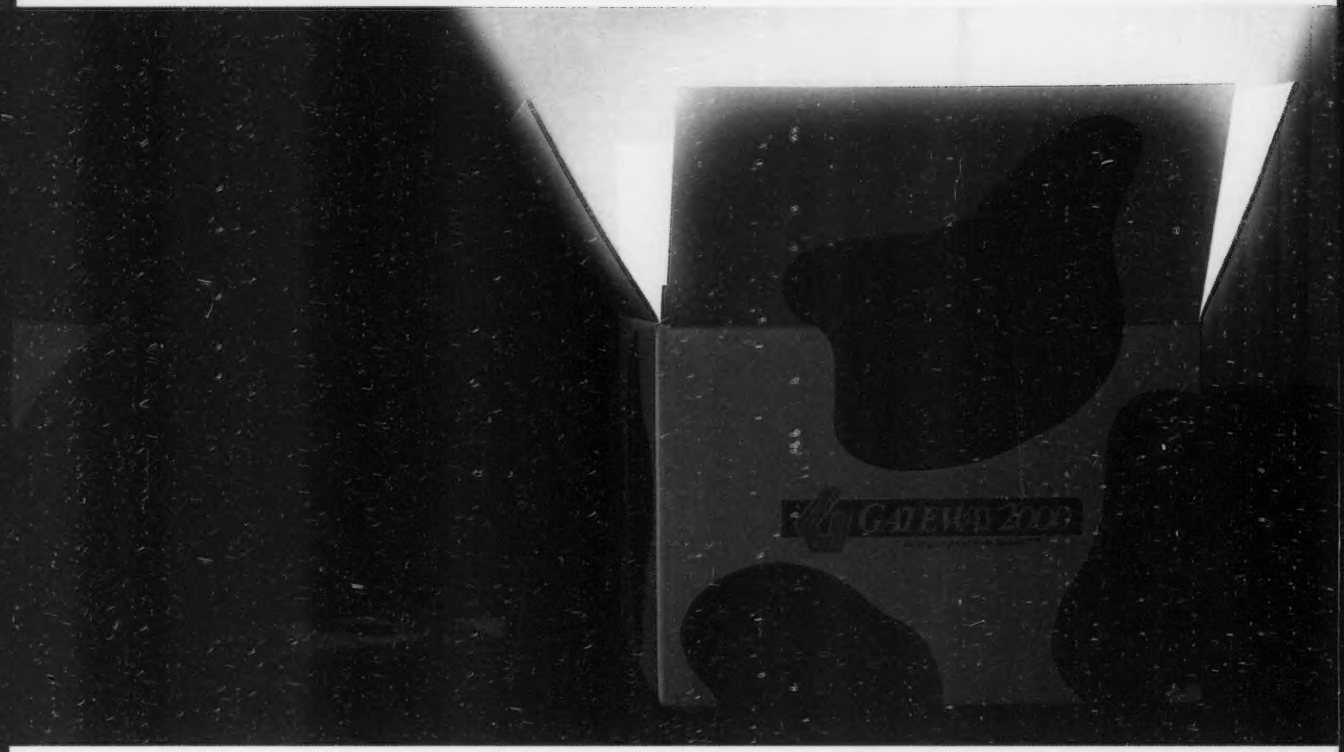
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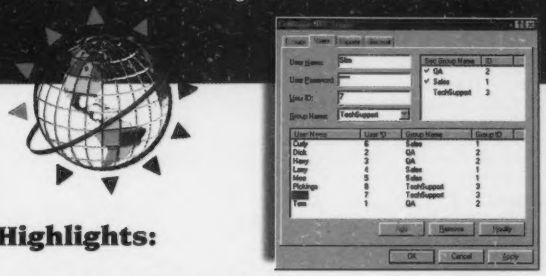
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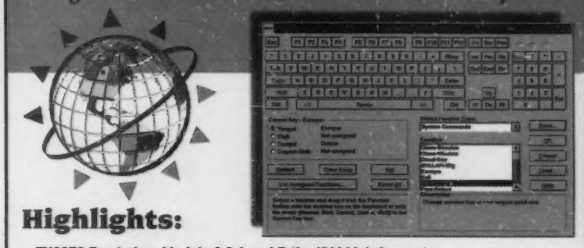
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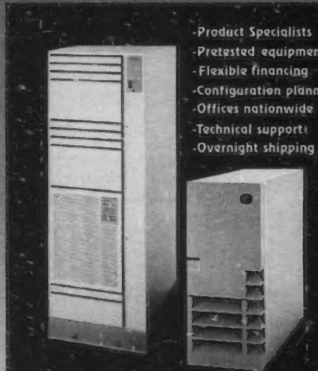
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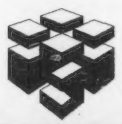
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OFFICIAL RULES - NO PURCHASE, PAYMENT OR CONTRIBUTION NECESSARY - To enter the Sweepstakes outlined below, follow all entry instructions published in this offer. Your entry must be received by the date specified elsewhere in this offer or by 1/15/98, whichever is sooner.

Super Prize Sweepstakes - Winners will be selected in random drawings from all eligible entries received. Early Bird winner will be selected in a separate drawing from among all eligible entries. Sweepstakes begins 9/3/96. Drawings will be conducted on or about 4/30/98 by Ventura Associates, Inc., an independent judging organization whose decisions are final. Drawing will be held at 1040 Avenue of the Americas, New York, NY 10018. You need not be present to win.

CONSUMER DISCLOSURE Different creative presentations of the sweepstakes may present different prize choices. Values at a given prize level will be approximately the same. All prize winners will have the option of selecting any prize offered at level won. Number, estimated maximum retail value and odds of winning each prize are as follows: 1 Grand Prize - $25,000 (or cash alternative of $25,000); 1 First Prize - $2,000; 1 Second Prize - $1,000; 50 Third Prizes - $80; 1,000 Fourth Prizes - $65 each; 1 Early Bird Prize - $5,000. Total prize value: $102,000.00. Certain creative presentations of the Super Prize Sweepstakes may present an Early Bird Prize. To qualify for the Early Bird Prize, if the Early Bird Prize is presented in your offer, your entry must be received by the Early Bird date specified elsewhere in this offer. Odds of winning any prize are determined by the total number of eligible entries received. Distribution of sweepstakes will not exceed 300 million. All Super Prize Sweepstakes prizes will be awarded.

Automobile, boat/trailer prizes must be picked up at local dealer. All other merchandise prizes will be shipped to winner. Boat/trailer and/or automobile title, tags, licenses and registration fees are winner's responsibility as are any other incidental expenses not specified in the offer. Trip prizes subject to availability and must be completed within 12 months of date awarded. Actual values of trips depend on location of winners and fares at time of departure. Certain restrictions and blackout dates may apply. If a trip prize is won by a minor, minor must be accompanied by a parent or legal guardian. Winner's traveling companion will be required to sign a release of liability prior to departure. Trip prizes are on a space available basis and do not include personal purchases or incidentals. No substitution of prizes, except sponsor reserves the right to substitute a prize of equal or greater value in the event an advertised prize is unavailable.

For winners list (available after 6/30/98) send self-addressed, stamped envelope by 1/15/98 to: Super Prize Winners, P. O. Box 9193, Medford, NY 11763-9193.

THE FOLLOWING APPLIES TO THE SWEEPSTAKES ABOVE - No purchase, payment or contribution necessary to enter or win. No photocopied or mechanically reproduced entries will be accepted. Not responsible for technical malfunctions, failure of computer, telephone equipment or software, inaccurate transmission of entry information or for lost, late, misdirected, damaged, incomplete, illegible or postage-due mail. All entries become the property of sponsors and none will be returned.

Winner notification will be by mail. A winner may be required to sign and return an Affidavit of Eligibility/Liability/Publicity Release within 14 days of date printed on notification or he/she will be disqualified. Any prize/prize notification returned as undeliverable will result in disqualification. If a *guest* prize is won by a minor, it will be awarded to parent or legal guardian and the Affidavit of Eligibility and Release must be signed by the parent or legal guardian. Except where prohibited by law, winners consent to the use of their names, hometowns, likenesses and photographs for advertising and publicity without additional compensation.

Sweepstakes is open to legal residents of the U. S., Canada and Europe (in those areas where made available) who have received the offer. In the event that the designated recipient of the offer has moved, the offer may not be valid in the state, country or province to which the offer has been forwarded. Void in Puerto Rico and where prohibited by law. All federal, state, provincial and local laws and regulations apply.

All prize values are in U. S. currency. No transfer of prize permitted. A winner is responsible for all taxes on his/her prize.

Canadian residents, in order to win, must first correctly answer a time-limited skill testing question administered by mail. Any litigation regarding the conduct and awarding of a prize in this publicity contest by a resident of the province of Quebec may be submitted to the Regie des alcools, des courses et des jeux.

Sweepstakes may be presented in different creative presentations by different organizations. Ventura Associates, Inc., 1040 Avenue of the Americas, New York, NY 10018, the independent judging organization has provided all prizes at no charge. Ventura Associates, Inc., reserves the right to withdraw the promotion if it becomes technically corrupted. Employees of Sweepstakes Administrator, presenting organizations, their advertising agencies and promotional companies involved in this promotion and their families, agents, successors and assignees are ineligible to participate in the promotion and shall not be eligible for any prizes covered herein. The parties hereto acknowledge that SCA is not liable for any prize awards payable to promotion participants in violation of this term.

COMPUTERWORLD TECHNOTOYS WEEKLY SWEEPSTAKES OFFICIAL RULES: No purchase necessary. Complete official entry form or print all entry information on plain paper, including this week's prize and fax to: (800)898-2299. Incomplete entries not eligible. Sweepstakes begins 12:01 am (EST) Monday (the date of the issue). All entries must arrive by fax no later than 11:59 am Monday of the following week. The issue date can be found at the top of most pages of this magazine. Sponsor not responsible for telephone or fax equipment failure or delayed transmission. All entries become sponsor's property & will not be returned.

Winner will be determined in a random drawing on or about 5:00 pm (EST) the Monday following the issue date. You need not be present to win. The prize (and its retail value) detailed with the entry form is guaranteed to be awarded & delivered to winner approx. 30 days from drawing date. If notification letter or prize is returned as undeliverable, it will be awarded to an alternate winner at random. No prize substitutions except due to unavailability, in which case a prize of equal value will be awarded. Prize not transferable or redeemable for cash. All taxes on prize are winner's responsibility. Acceptance of prize constitutes permission (except where prohibited) to use winner's name, hometown & likeness for promotional purposes without additional compensation.

Sweepstakes is open to legal US residents, 18 & older. Odds of winning determined by total number of entries received. Est. distribution: 150,448. Sponsor: Computerworld, Inc. 500 Old Connecticut Path, Framingham, MA 01701. Employees of Computerworld, inc., its affiliates, subsidiaries, retailers, advertising & promotion agencies & immediate families of each not eligible. All federal, state & local laws & regulations apply. Void in Puerto Rico & where prohibited by law.

For winners list (available within 4 weeks of the drawing), send a SASE to: Sweepstakes Winners, Computerworld TechnoToys Sweepstakes, 500 Old Connecticut Path, Framingham, MA 01701.

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STOCK TICKER

The Week in Stocks

Gainers

PERCENT

Control Data Systems Inc.	36.3
NetManage Inc.	35.5
Yahoo! Inc.(H)	33.6
Amazon.com	24.8
Red Brick Systems Inc.	24.5
DSC Communications	21.0
Keane Inc.(H)	18.6
Micrel Semiconductor Inc.(H)	17.8

DOLLAR

Compaq Computer Corp.(H)	14.81
Dell Computer Corp.(H)	13.31
Yahoo! Inc.(H)	11.25
Keane Inc.(H)	10.13
Texas Instruments	8.88
Micrel Semiconductor Inc.(H)	8.63
Intel Corp.	7.06
America On-Line(H)	6.88

Losers

PERCENT

Wall Data Inc.	31.9
Radius Inc.	20.0
Truevision Corp.	19.4
Banyan Systems Inc.	16.3
MCI Communications Corp.(H)	14.7
Open Market Inc.	14.2
Forte Software	11.9
Secure Computing Corp.	11.3

DOLLAR

Wall Data Inc.	8.63
MCI Communications Corp.(H)	6.25
Bell Atlantic Corp.	4.00
Nynex Corp.	3.06
Sprint Corp.	2.13
American Mgmt. Systems	2.00
Open Market Inc.	1.81
Policy Management Sys.	1.56

INDUSTRY ALMANAC

Analysts strong on Seagate

After issuing two warnings last month of lower-than-expected quarterly revenue and earnings, Seagate Technology, Inc. (NYSE: SEG) released a report last week that lived up to its billing.

Revenue was $1.98 billion, and earnings were 23 cents per share, compared with $2.01 billion in revenue and earnings of 42 cents per share for the same quarter last year. Net income was $59 million, compared with $101 million for the same quarter last year. Seagate cited weak demand for high-end products.

But the blue news had little effect on at least two financial analysts, who still back the hard drive maker as a long-term performing stock and are recommending it to investors.

Both analysts say Seagate's performance should improve by year's end with strong growth in market demand.

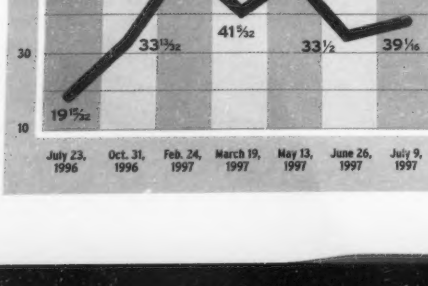
"I don't think investors should be overly concerned about the short term," says Jean W. Orr, an analyst at A. G. Edwards in St. Louis. "The demand for growth continues to be very strong, and I think Seagate is very well-positioned and actually will be an industry leader for years to come."

Michael Geran, vice president of the Pershing division at Donaldson, Lufkin & Jenrette Securities Corp. in Jersey City, N.J., says, "This company has a history of cyclical growth. It surges, goes flat and surges again."

Both analysts say Seagate wasn't able to meet demand for drives last year. It rectified the problem earlier this year, only to find demand lagging at the high end. That might have been because Western Digital Corp. (NYSE: WDC) in Irvine, Calif., moved into the high-end storage components business, slowing "Seagate's growth rate ... from superlative to normal," Geran says. — Matt Hamblen

SEAGATE'S UPS AND DOWNS

Seagate has had a roller-coaster year, but analysts expect improvements during the next six months



Exch	52-Week			July 11 2 PM	Wk Net Change	Wk Pct Change
Communications and Network Services						**UP 1.89%**
COMS	81.38	24.00	3 COM Corp.	54.50	6.63	13.8
AIT	71.75	49.63	AMERITECH Corp.	69.50	-0.38	-0.5
ASND	80.25	36.13	Ascend Communications	47.94	-1.06	-2.2
T	42.63	30.75	AT & T	35.13	-0.88	-2.4
BNYN	7.88	1.19	Banyan Systems Inc	2.25	-0.44	-16.3
BAY	30.63	15.38	Bay Networks Inc.	27.75	0.19	0.7
BEL	78.25	55.13	Bell Atlantic Corp.	71.56	-4.00	-5.3
BLS	48.69	35.25	Bellsouth Corp. (H)	46.69	-0.94	-2.0
BRKT	42.25	9.25	Brocktrout Technology	10.63	0.38	3.7
CS	46.50	26.50	Cabletron Systems	32.94	2.25	7.3
CGRM	17.50	8.63	Centigram Communications	12.75	-0.75	-5.6
CSCO	77.25	44.75	Cisco Systems Inc. (H)	75.38	3.81	5.3
CMNT	7.50	3.75	Computer Network Tech. (L)	4.06	-0.06	-1.5
DIGI	33.13	12.63	DSC Communications	26.63	4.63	21.0
FORE	43.63	10.00	FORE Systems Inc.	15.13	0.19	1.3
GDC	13.63	6.13	General Datacomm Inds.	7.56	-0.44	-5.5
GSX	51.31	36.13	General Signal Networks (H)	51.31	4.69	10.1
GTE	49.38	37.75	GTE Corp.	46.63	0.94	2.1
LU	79.56	30.63	Lucent Tech. (H)	79.56	4.06	5.4
MADGF	16.13	4.50	Madge Networks NV	6.13	0.00	0.0
MCIC	43.38	22.38	MCI Communications Corp. (H)	36.13	-6.25	-14.7
NETM	11.25	2.50	NetManage Inc.	3.94	1.03	35.5
NTRX	10.63	1.44	Netrix Corp.	2.13	0.00	0.0
NCDI	16.25	3.00	Network Computing Devices	10.75	-0.50	-4.4
NWK	20.88	11.13	Network Equipment Tech.	18.06	0.25	1.4
NETG	30.25	11.13	Network General	13.50	-0.06	-0.5
NN	51.94	20.25	Newbridge Networks Corp. (H)	51.94	4.69	9.9
NT	100.19	45.00	Northern Telecom Ltd. (H)	100.19	3.69	3.8
NOVL	13.25	6.28	Novell Inc.	6.88	-0.47	-6.4
NYN	59.88	42.00	Nynex Corp.	54.56	-3.06	-5.3
OCTL	31.75	13.50	Octel Communications Corp.	24.25	1.06	4.6
ODSI	24.25	9.75	Optical Data Systems Inc.	13.19	-0.31	-2.3
PCTL	40.38	8.25	Picturetel Corp.	9.50	0.13	1.3
PTON	4.25	1.31	Proteon Inc.	1.94	0.25	14.8
RACO	6.38	2.13	Racotek Inc.	2.31	0.13	5.7
RETX	9.25	3.38	Retix	5.00	0.00	0.0
SBC	62.25	46.00	SBC Communications (H)	61.38	-0.25	-0.4
SFA	23.50	12.00	Scientific Atlanta Inc.	22.75	0.81	3.7
SHVA	85.75	8.25	Shiva Corp.	11.88	1.13	10.5
FON	52.75	34.50	Sprint Corp.	50.06	-2.13	-4.1
SMSC	15.25	8.25	Standard Microsystems Corp.	10.31	0.13	1.2
USW	39.44	27.25	US West Inc. (H)	38.06	-0.81	-2.1
XIRC	31.13	7.50	Xircom	12.44	0.44	3.6
XYLN	59.38	12.38	Xylan Corp.	16.06	-0.31	-1.9
PCs and Workstations						**UP 7.47%**
AALR	15.50	6.13	Advanced Logic Research	15.44	0.06	0.4
AAPL	27.75	13.00	Apple Computer Inc.	14.81	1.13	8.2
ASTA	6.50	3.94	AST Research Inc.	5.16	0.03	0.6
CPQ	123.75	40.50	Compaq Computer Corp. (H)	123.56	14.81	13.6
DELL	135.69	20.25	Dell Computer Corp. (H)	135.69	13.31	10.9
GTW	38.06	13.88	Gateway 2000 Inc. (H)	37.94	5.38	16.5
HWP	60.94	37.75	Hewlett Packard Co.	60.94	4.56	8.1
MUEI	25.38	8.75	Micron Internatinonal Inc.	18.81	1.69	9.9
NIPNY	74.00	49.88	NEC America	70.63	1.75	2.5
SGI	28.38	12.63	Silicon Graphics	17.94	0.94	5.5
SUNW	39.88	22.00	Sun Microsystems Inc. (H)	39.31	2.19	5.9
Large Systems						**UP 4.38%**
AMH	14.00	8.13	Amdahl Corp.	9.88	-0.19	-1.9
DGN	28.44	9.00	Data General Corp.	28.44	2.06	7.8
DEC	42.88	25.00	Digital Equipment Corp.	38.06	1.50	4.1
IBM	96.69	44.63	IBM (H)	96.50	1.63	1.7
MDCD	9.75	2.88	Meridian Data Inc.	4.38	0.06	1.4
NETF	4.38	0.88	NetFrame	0.94	0.00	0.0
SQNT	23.50	10.50	Sequent Computer Sys. (H)	23.50	2.00	9.3
TEXM	3.88	1.88	Sequoia Systems Inc.	3.13	-0.25	-7.4
SRA	53.63	16.63	Stratus Computer Inc. (H)	53.63	3.75	7.5
TDM	25.31	8.63	Tandem Computers Inc. (H)	25.25	3.13	14.1
UIS	8.50	5.38	Unisys Corp. (H)	8.50	0.88	11.5
Software						**UP 2.37%**
ADBE	49.00	28.50	Adobe Systems Inc.	36.38	-0.75	-2.0
AMSWA	8.75	3.75	American Software Inc.	8.06	0.50	6.6
APLX	40.00	3.13	Applix Inc.	7.00	-0.06	-0.9
ARSW	55.50	17.00	Arbor Software	34.50	-0.38	-1.1
ADSK	42.88	18.50	Autodesk Inc. (H)	41.75	3.00	7.7
BGSS	32.50	19.50	BGS Systems Inc.	28.50	-0.50	-1.7
BMCS	58.63	25.38	BMC Software Inc.	56.63	2.75	5.1
BOOL	27.50	14.00	Boole and Babbage	24.50	-1.00	-3.9
BORL	9.13	4.75	Borland Int'l Inc.	6.06	-0.69	-10.2
BOBJY	30.00	7.13	Business Objects (L)	8.25	-0.94	-10.2
CAYN	6.88	2.63	Cayenne Software Inc. (L)	3.00	-0.25	-7.7
CNTR	5.88	1.13	Centura Software	2.13	0.06	3.0
COGNF	39.50	18.25	Cognos Inc.	31.63	-1.00	-3.1
CA	67.88	37.25	Computer Associates	58.94	1.44	2.5
CVN	10.38	3.13	Computervision Corp.	4.25	0.19	4.6
CPWR	50.75	16.13	Compuware Corp.	50.13	3.13	6.6
CSRE	29.25	10.75	Comshare Inc.	11.75	-0.63	-5.1
COSFF	10.75	5.00	Corel Corp.	6.38	-0.31	-4.7
DWTI	6.63	2.63	Datawave Technologies Inc.	2.97	0.03	1.1
FILE	36.50	9.50	Filenet Corp.	18.63	2.44	15.1
FRTE	48.50	7.25	Forte Software	11.13	-1.50	-11.9
FTPS	9.50	4.25	FTP Software Inc.	4.63	0.31	7.2
HUMCF	35.00	22.00	Hummingbird Comm. Ltd.	25.88	-0.38	-1.4
HYSW	26.38	10.50	Hyperion Software Corp.	23.94	0.69	3.0
IRIC	16.38	11.00	Information Resources	15.00	0.75	5.3
IFMX	31.13	6.56	Informix Corp.	9.19	-0.13	-1.3
INGR	12.63	6.25	Intergraph Corp.	8.69	0.19	2.2
LEAF	5.50	0.81	Interleaf Inc.	2.00	0.25	14.3
ISLI	11.13	6.25	Intersolv Inc.	10.00	0.75	8.1
INTU	46.25	20.88	Intuit Inc.	24.13	0.00	0.0
TLC	25.75	3.50	Learning Co. (The)	9.13	0.13	1.4
LCWX	12.38	4.13	Logic Works	7.00	0.75	12.0
MAPS	13.00	7.88	MapInfo Corp.	11.13	0.63	6.0
MATH	7.63	2.19	MathSoft	3.63	0.19	5.5
MCAF	70.00	27.88	McAfee Associates	69.50	2.88	4.3
MENT	15.13	6.50	Mentor Graphics	8.72	-0.03	-0.4
MIFGY	32.75	9.75	Micro Focus (H)	12.75	2.38	7.8
MGXI	14.25	4.00	Micrografx Inc.	6.50	0.13	2.0
MSFT	134.94	53.75	Microsoft Corp.	130.81	1.25	1.0
ORCL	53.50	33.25	Oracle Corp.	52.50	2.75	5.5
PMTC	64.25	34.88	Parametric Technology	45.88	3.88	9.2
PARQ	5.50	0.88	ParcPlace Systems Inc.	1.13	0.13	12.5
PSFT	64.25	28.25	Peoplesoft (H)	61.50	4.75	8.4
PTEC	19.75	11.00	Phoenix Technologies	13.13	-0.13	-0.9
PSQL	13.75	5.50	Platinum Software	11.06	-0.25	-2.2
PLAT	17.88	9.25	Platinum Technology	13.19	-0.06	-0.5
PRGS	23.00	12.13	Progress Software Corp.	16.50	0.00	0.0
RNBO	22.13	13.75	Rainbow Technologies Inc.	19.63	1.00	5.4
REDB	30.00	5.00	Red Brick Systems Inc.	8.25	1.63	24.5
SAPE	54.00	29.75	Sapient Corp. (H)	53.25	3.75	7.6
SCOC	8.63	3.13	SCO Inc.	4.47	0.59	15.3
SDTI	47.63	21.00	Security Dynamics Tech.	36.38	0.75	2.1
SOTA	18.88	8.88	State of the Art	12.25	0.88	7.7
SSW	78.88	27.25	Sterling Software Inc.	33.06	1.31	4.1
SDRC	28.50	15.00	Struct. Dynamics Research (H)	27.88	0.38	1.4
SYBS	21.13	12.13	Sybase Inc.	13.66	1.16	9.3
SYMC	21.25	8.75	Symantec Corp. (H)	20.09	0.66	3.4
SNPS	50.50	21.75	SynOpsys	39.81	4.31	12.1
SSAX	15.75	3.88	System Software Assoc.	7.19	-0.44	-5.7
SYSF	36.50	7.38	Systemsoft Corp.	11.00	0.50	4.8
TRUV	8.00	1.50	Truevision Corp.	1.81	-0.44	-19.4
VIEW	17.00	8.38	ViewLogic Systems	14.75	-0.13	-0.8
VMRK	11.13	5.50	VMark Software Inc.	8.75	0.88	11.1
WALK	15.69	9.38	Walker Interactive Systems (H)	15.13	0.75	5.2
WALL	29.13	12.25	Wall Data Inc.	18.38	-8.63	-31.9
WANG	24.06	15.38	Wang Laboratories Inc.	22.13	0.31	1.4
Internet						**UP 5.62%**
AMZN	30.00	15.75	Amazon.com	28.63	5.69	24.8
AOL	69.38	22.38	America On-Line (H)	69.38	6.88	11.0
BBN	29.38	15.13	BBN Corp.	28.88	-0.06	-0.2
CSRV	19.50	8.63	Compuserve Corp.	11.81	1.06	9.9
EDFY	26.25	8.88	Edify Corp.	16.00	2.38	17.4
LCOS	22.75	5.75	Lycos Inc.	13.88	1.38	11.0
NETC	25.00	7.88	Netcom On-Line	13.50	-1.38	-9.2
NSCP	65.00	23.50	Netscape Comm. Corp.	39.19	1.75	4.7
OMKT	25.50	6.50	Open Market Inc.	10.94	-1.81	-14.2
PSIX	14.50	5.50	PSINet	8.19	0.19	2.3
QDEK	9.88	2.00	Quarterdeck Corp.	2.63	0.09	3.7
RAPT	25.75	8.88	Raptor Systems	12.19	0.94	8.3
SCUR	23.25	4.75	Secure Computing Corp.	5.66	-0.72	-11.3
SPYG	20.50	6.00	Spyglass Inc.	8.00	-0.38	-4.5
YHOO	45.13	15.50	Yahoo! Inc. (H)	44.75	11.25	33.6
Semiconductors						**UP 7.58%**
AMD	48.50	10.25	Advanced Micro Devices	37.69	1.75	4.9
ADI	30.25	12.75	Analog Devices Inc. (H)	30.25	2.88	10.5
CHPS	26.50	7.88	Chips and Technologies	11.19	0.81	7.8
CRUS	24.25	8.00	Cirrus Logic	10.44	-0.25	-2.3
CY	16.63	9.13	Cypress Semiconductor Corp.	15.81	0.88	5.9
CYRX	30.00	11.50	Cyrix	20.75	0.63	3.1
INTC	169.75	64.13	Intel Corp.	152.00	7.06	4.9
LSCC	62.63	19.75	Lattice Semiconductor	61.50	4.50	7.9
LSI	46.88	17.00	LSI Logic Corp.	35.63	4.00	12.6
MCRL	57.00	12.00	Micrel Semiconductor Inc. (H)	57.00	8.63	17.8
MU	45.25	16.63	Micron Technology	41.94	3.88	9.7
MOT	87.00	44.13	Motorola Inc. (H)	85.13	4.69	5.8
NSM	34.50	13.00	National Semiconductor (H)	34.50	3.31	10.6
TXN	96.75	40.50	Texas Instruments	96.75	8.88	10.1
VLSI	29.25	10.38	VLSI Technology	26.00	1.31	5.3
XLNX	58.50	24.50	Xilinx	50.06	2.19	4.6
ZLG	29.50	14.88	Zilog Inc.	21.13	1.88	9.7
Peripherals and Subsystems						**UP 3.02%**
ADPT	46.88	17.50	Adaptec Inc.	40.66	2.28	5.9
APCC	31.50	8.50	American Power Conversion	21.44	1.56	7.9
CBEX	5.31	0.97	Cambex Corp.	1.56	0.13	8.7
CREAF	20.25	3.50	Creative Technology Ltd.	19.38	2.63	15.7
RACE	24.50	5.00	Data Race Inc.	11.19	-0.44	-3.8
DTM	12.50	5.25	Dataram Corp.	10.31	1.31	14.6
EMC	45.94	16.50	EMC Corp. (H)	45.94	5.94	14.8
EMLX	21.25	12.88	Emulex Corp.	14.75	-0.63	-4.1
ESCC	29.75	19.50	Evans and Sutherland	27.25	0.25	0.9
EXBT	17.50	9.50	Exabyte	13.56	-0.31	-2.3
IISLF	2.69	1.25	Intelligent Info. Systems	1.31	-0.06	-4.5
IOM	29.75	12.63	Iomega Corp.	20.38	-0.06	-0.3
IPLS	4.00	0.94	IPL Systems Inc.	1.34	0.03	2.4
KMAG	36.75	15.31	Komag Inc.	18.00	0.56	3.2
MTSI	29.75	12.88	Micro Touch Systems Inc.	25.13	2.38	10.4
PNCL	8.75	0.59	Pinnacle Micro Inc.	0.69	-0.06	-8.3
AQM	25.38	2.38	QMS Inc.	2.94	0.25	9.3
QNTM	25.00	5.50	Quantum Corp.	23.88	2.25	10.4
RDUS	2.56	0.19	Radius Inc.	0.25	-0.06	-20.0
SEG	56.25	18.13	Seagate Technology	38.00	0.50	1.3
STK	54.38	30.00	Storage Technology	49.13	0.75	1.6
TEK	63.44	36.88	Tektronix Inc. (H)	61.88	-1.31	-2.1
WDC	38.63	10.00	Western Digital Corp.	35.25	2.56	7.8
XRX	83.38	44.63	Xerox Corp. (H)	83.38	2.25	2.8
Services						**UP 5.37%**
AMSY	37.13	15.75	American Mgmt. Systems	24.88	-2.00	-7.4
ANLY	36.75	17.50	Analysts Int'l.	32.88	0.88	2.7
AUD	50.13	35.63	Auto Data Processing	48.44	0.44	0.9
BDMI	30.75	19.75	BDM International Inc.	22.00	0.38	1.7
CATP	37.25	21.25	Cambridge Tech. Partners	36.50	4.75	15.0
CEN	53.13	29.50	Ceridian Corp.	41.38	-1.50	-3.5
CDO	29.19	15.13	Comdisco Inc. (H)	29.06	0.00	0.0
CPU	30.88	13.25	CompUSA Inc.	25.50	0.38	1.5
CHRZ	42.00	10.13	Computer Horizons (H)	42.00	6.00	16.7
CSC	86.50	57.88	Computer Sciences	74.25	0.38	0.5
TSK	39.50	11.63	Computer Task Group	37.00	1.88	5.3
CDAT	28.63	12.75	Control Data Systems Inc.	20.44	5.44	36.3
ECGS	10.63	3.63	Eggnead Discount Software	4.13	0.31	8.2
EDS	63.38	31.75	Electronic Data Systems Corp.	42.88	0.38	0.9
INAC	40.63	15.38	Inacom Corp.	33.50	1.00	3.1
INEL	10.75	2.25	Intelligent Electronics	2.81	0.00	0.0
KEA	64.69	16.38	Keane Inc. (H)	64.69	10.13	18.6
MICA	25.00	11.00	Micrognge Inc.	21.88	2.00	10.1
PAYX	42.50	25.63	Paychex	40.00	-0.25	-0.6
PMS	54.00	33.13	Policy Management Sys.	48.25	-1.56	-3.1
REY	30.63	13.75	Reynolds and Reynolds	16.81	-0.06	-0.4
SCBI	26.00	14.44	SCB Computer Tech. Inc.	28.00	3.25	14.3
SEIC	27.75	17.75	SEI Corp. (H)	27.75	3.00	12.1
SMED	63.50	36.75	Shared Medical Systems	56.13	-0.94	-1.6
SSPE	33.50	10.00	Software Spectrum Inc. (L)	12.13	-0.69	-5.4
SDS	50.75	35.38	Sungard Data Systems	49.50	3.19	6.9
VST	29.75	6.50	VanStar Corp.	14.75	1.63	12.4

KEY: (H) = New annual high reached in period (L) = New annual low reached in period

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CA to give away management tool

CONTINUED FROM COVER 1

Unicenter TNG (The Next Generation) is a closed, all-inclusive enterprise management suite.

CA hopes to attract users and developers to the product and set a de facto standard by giving away its core functions and a snazzy interface. If the free framework approach succeeds, users can buy management-ready servers from diverse hardware vendors.

And users can expect software vendors to be able to integrate, for the first time, their favorite tools with Unicenter TNG.

Even so, other analysts said they doubt that CA or its competitors will succeed any time soon in moving users on to enterprisewide management products, mostly because of training, complexity and cost issues.

The strategy calls for CA and at least a dozen server vendors at CA-World '97 in New Orleans to announce plans to give away seven key parts of Unicenter TNG, according to users and industry analysts.

Popular servers and free CD-ROMs will give users the Unicenter TNG Framework. That set of underlying management engines recognizes devices across networks, tracks events, schedules tasks and delivers reports — all controlled by a two- or three-dimensional or World Wide Web interface.

"It's a surprise move, like the sacrifice throw in judo that catches opponents off guard," said an analyst who was briefed on the CA announcement and who requested anonymity. "Users will ask why they should spend hundreds of thousands of dollars on other management frameworks [such as OpenView from Hewlett-Packard Co. or TME 10 from Tivoli Systems, Inc., for example] when this one is free."



The Unicenter TNG Framework includes a 3-D interface to networked systems and applications

DOMINO EFFECT

Through widespread availability of these building blocks, CA expects to speed adoption of the integrated Unicenter TNG tools for software distribution, security, help desk and other functions. And if CA succeeds in gaining user attention, other tool vendors will be forced to make their products integrate with Unicenter TNG, analysts said.

"Instead of joint back-scratching, you'll see real partnerships develop now between CA and the platform and software vendors," said another analyst who was briefed.

For example, Unison Software, Inc. in Santa Clara, Calif., will announce a version of Maestro, a tool for scheduling tasks throughout distributed environments, that will take advantage of the Unicenter TNG Framework.

Unison officials said a mutual banking customer sought integration of Maestro with Unicenter TNG to replace the suite's built-in scheduler.

Officials at CA, in Islandia, N.Y., declined to comment on specific announcements.

"This sounds like a good move, because it will make Unicenter TNG easier to deploy. And that means we'll benefit from it a lot sooner," said Mike Altiero, manager of network services at American International Underwriters in Livingston, N.J.

The insurance underwriter is coordinating support staff at 26 sites worldwide to install agent software for Unicenter TNG. "We'd like to save that effort by having the basic pieces ship on servers," Altiero said.

For example, NCR Corp. recently announced plans to include Unicenter TNG on its servers.

Analysts predicted that other systems vendors will follow suit this week, including HP and Sun Microsystems, Inc. □

Uphill battle for users

Some analysts remain skeptical that CA's bid and serious efforts by enterprise management rivals HP and Tivoli will have much impact on users.

"I don't see anyone becoming a leader any time soon," said Sue Aldrich, management analyst at Patricia Seybold Group in Boston. "Everyone talks about wanting enterprise management, but nobody really is doing it."

Even though these end-to-end management tool kits promise a payoff in efficiency, they are too hard to implement for a combination of reasons, said Ray Paquet, a research director at Gartner Group, Inc. in Stamford, Conn.

The "uphill battle" starts with a demand for new skills, management processes and organizational changes, Paquet said. Then a budget boost for training, more parts and staged rollout is required to get over the top before users can enjoy the benefits of the downhill slide, he said. — Patrick Dryden

Windows 95 users to get an NT nudge

CONTINUED FROM COVER 1

we'll upgrade on an as-needed basis and no faster," said Deborah Gillotti, chief information officer at Starbucks Coffee Co. in Seattle.

Microsoft is under no illusion that a migration to NT Workstation — which currently has an installed base of about 6 million users — will be even remotely fast.

Fully 90% of its operating system shipments are still Windows 95, and Microsoft doesn't expect that figure to change much throughout next year, said Jonathan Roberts, director of product management for Windows 95 and NT Workstation.

"We will always continue to support Windows 95 and Windows 98," Microsoft's forthcoming upgrade to Windows 95, Roberts said. "It is not Microsoft's strategy to force anyone to upgrade. Corporate edicts like that never work, and users will always do what they want."

ATTRACTIVE FEATURES

Instead, Microsoft plans to adopt the carrot instead of the stick in its bid to drive the crossover from Windows 95 and the forthcoming Memphis — the code name for Windows 98 — to NT Workstation, he said.

It will do so with a series of initiatives. Those lures will include a slew of management tools that are slated to be available when the operating system ships.

Microsoft also will offer an updated, nominally priced Windows NT 5.0 Resource Kit to ease the upgrade and as-yet-unspecified "seeding programs" that likely will feature discount pricing and technical support promotions, Roberts said.

Users said Microsoft must deliver crucial functionality such as power management capabilities to support remote Windows NT laptop users.

They said the company also must deliver support for The Microsoft Network on Version 5.0 to successfully encourage evaluations.

According to Mike Gartenberg, an analyst at Gartner Group, Inc. in Stamford, Conn., NT Workstation implementations are still 32% to 47% more expensive than Windows 95, based on the cost of upgrading hardware and other nonhardware issues such as support and maintenance.

But because the price of hardware has plummeted in the past 18 months, cost is no longer the major impediment to upgrading, according to users.

"The smoothest desktop path for corporate users is still Windows 95 to Windows 98," Gartenberg explained. Migration to Windows NT Workstation at this point in time is not warranted or justified, he said.

"Right now, it takes an entire day to upgrade one notebook user from Windows 95 to NT Workstation and about five hours to upgrade a Windows 95 desktop PC to NT Workstation," explained Jeff Dazell, LAN administrator for network services at Dana Corp. in Toledo, Ohio.

"We're waiting for Windows NT 5.0 to fill these gaping holes before we convert our desktops. I want a smooth migration," Dazell said.

J. Briscoe Stephens, advanced scientific systems coordinator at NASA's Marshall Space Flight Center in Huntsville, Ala., agreed.

"The major obstacle [to migrating to NT Workstation] for our 7,000 users is that the majority of the software packages we use still run only on Win 95," he said. □

"The major obstacle [to migrating to NT Workstation] for our 7,000 users is that the majority of the software packages we use still run only on Win 95."
– J. Briscoe Stephens, NASA's Marshall Space Flight Center

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ABC ABP RED TAG

COMMENTARY

What do Mars and Washington have in common?

David Coursey

At first glance, the recent Supreme Court decision gutting the Communications Decency Act (CDA) would appear to have nothing in common with the Mars landing a week later. But actually, a little car rolling around on the red planet did an excellent job of proving from more than 90 million miles away that the Supreme Court justices just don't get it.

From the start, I was amazed at the Internet community's hand-wringing over the Exon/Coats Communications Decency Act, which was enacted as part of the Telecommunications Deregulation and Reform Act of 1996. Internet types just didn't seem to get the political gamesmanship surrounding the bill.

Given the lip service Washington pays to "family values," it should have been obvious that supporting the act was a no-lose proposition for congressmen. Sure, the American Civil Liberties Union would be upset, as would the politically inert 'netizenry, but that would be about as far as the wailing would go.



Keeping porn away from kiddies (and kiddie porn away from everyone) provided plenty of political cover, and the bill easily became law. Even lawmakers who were against the censorship aspects of the CDA could vote for it — safe in the knowledge that the high court would undo the damage. Supporting the act was an easy decision for a politician.

Right on schedule, the Supreme Court upheld a lower court's ruling that the CDA blocks free speech and thus violates the First Amendment. It's dead. Drop the gavel. Game over.

MARTIAN MANIA

I take you now from Washington to Mars (not as big a leap as it may seem), where a spacecraft bounces 50 feet upon landing, eventually settling down to send us pictures of the martian rocks and sand. Pathfinder was, and is, Page One news all over the world.

And all this martian mania is fueled in part by the Internet. How many million hits will NASA's Web site see? Will it be a billion before things calm down? Perhaps. What we have here is the first major event that millions of people have shared over the Internet. As television fades from center stage, the Web is sidling up to take TV's place as our nation's No. 1 source of shared experience. In the future, something won't have happened if it hasn't happened on the Internet.

Which returns us to nine people who aren't Internet-literate yet get to make all the big decisions.

In striking down the CDA, the Supreme Court rejected an argument that the Internet is like television or radio, both of which face limitations on what can be broadcast. No, the justices decided, the 'net is like person-to-person conversation and deserves full free speech protection as such. The truth is, the Internet is *both* these things, but the duality isn't so obvious that the justices could make the distinction.

Maybe next time someone tries to regulate the Internet (which I think is an absolute necessity), the lawyers will understand its true nature — that the 'net is both a personal communications *and* a broadcast medium — and regulate each accordingly. Let's stop using the Internet as a way to win political points and find some way to reasonably protect both free speech and our society. □

Coursey, an analyst and consultant, is editor of "coursey.com," an online newsletter available at www.coursey.com. His E-mail address is david@coursey.com.

Year 2000: Business executives catch the fever

Frank Hayes

The woman on the telephone was amazingly cheerful, considering our gloom-and-doom topic was the year 2000 problem. She said her company's project to fix the millennium bug might slip its schedule a little. But except for one major system, everything should be done by the end of December.

That's December of *this* year. No wonder she was cheerful.

There wasn't any magic involved in that insurance company's year 2000 fix. Those folks didn't acquire a cutting-edge mechanical mangler to fix their code or depend on some guru with a mystical sense for what needed to be fixed.

Nope. They just analyzed the problem, budgeted the project and did the work.

Oh, yeah — they started more than a year ago.

The year 2000 problem isn't hard to fix. All you need is time. You find each place that makes reference to a year. You make sure that reference won't cause a problem when 1999 rolls over to 2000. Then you go on to the next reference. And repeat. Ad nauseam.



As a technical problem, that sounds mind-numbingly, lobotomizingly dull. Who would choose to come in to work, day after day, to crank through another pile of date fixes? Not the best and the brightest. Not even the dumb and the dullest.

As a project, the year 2000 fix makes a great career swamp for IS managers. It's hugely expensive. It will take months (if you're lucky) or even years. It adds no significant value to the business (well, except survival). It isn't going to excite users or make the CIO look good in front of the board.

So it isn't exactly a mystery that IS shops have a hard time unearthing year 2000 champions.

Compare that to the year 2000 business problem: If your company fixes its millennium bugs, it may gain big financial benefits. If not, the company dies.

The financial guys have figured this out. That's why year 2000 expenses are showing up as a line item in corporate financial statements.

I'm not talking about software vendors that sell year 2000 tools. These are banks, manufacturers and insurance companies that understand that dealing with the year 2000 problem is a business advantage right now.

Investors are likely to prefer companies that won't involuntarily self-destruct on Jan. 1, 2000. That means a company's year 2000 work is very interesting stuff in the financial world.

Result: If they don't have it already, your top management will soon be screaming for their own year 2000 line item for the annual report.

That's the same top management that couldn't be bothered six months or a year ago. The same board that wanted to find a scapegoat to blame for the problem, and a silver bullet — or preferably a cheap, silver-plated bullet — to fix it.

Is that stupid? Sure. Does the IS staff resent it? Probably.

But reality is that a combination of an uninteresting problem, zero-profit project and clueless executive team has allowed the year 2000 to grow from a nuisance to a catastrophe in the making.

Yes, it should have been started a year — or more — ago. It should have been done as part of other projects. It should have had full management support and a proper budget. You should have been able to talk cheerfully about your year 2000 project.

None of that happened. That stinks. But you've got to fix the millennium bug anyway.

While you're at it, puzzle over that disconnect between technical nonissue and business crisis. Otherwise, it will give you grief long after 2000 is gone. □

Hayes is Computerworld's staff columnist. His Internet address is frank_hayes@cw.com.

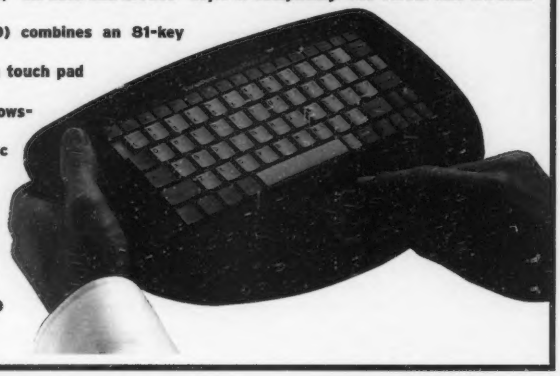
The Back Page

alt.cw

Dispatches & images from the fringes of the electronic frontier

WIRELESS KEYBOARD FOR LAID-BACK BROWSING

Interlink Electronics in Camarillo, Calif., has introduced a sleek input device for what it calls the relaxed, "sit back and browse" style of computing. The VersaPoint Wireless Keyboard ($160) combines an 81-key keyboard with a touch pad for Internet browsing and electronic messaging. It uses an infrared link with a range of up to 50 feet.





Usenet forums

The following are recent Usenet newsgroup discussion threads found on the Internet. You may be able to pick up the thread by entering keywords at the search engine www.dejanews.com.

- History of the C prompt (alt.folklore.computers)
- What makes OOP good? (comp.object)
- The work environment and programmer productivity (comp.software-eng)
- Your first word processor (alt.folklore.computers)
- Traveling with laptop: What about customs? (comp.sys.laptops)
- The negative effect of CASE tools (comp.programming)
- Monitoring suspicious "root" activity (comp.security.misc)

New Age titles

Vice president of technology facilitation

Year 2000 project librarian

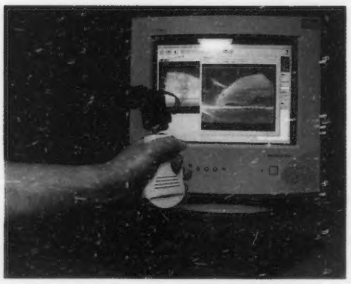
Director of knowledge management and consumer insights

Assistant vice president of information quality

Director of intellectual capital

Telemedicine for M*A*S*H units

Hawkeye Pierce never had it so good. The Pacific Northwest National Laboratory in Richland, Wash., and U.S. Army researchers have developed a portable medical device that takes ultrasound images of wounded soldiers at battlefield hospitals. The images can be transmitted via the Internet for diagnosis and analysis by medical experts elsewhere. The system was designed to analyze internal bleeding and puncture wounds, but the same technology could be used by rural hospitals and rescuers in remote locations.



Inside Lines

Hard to swallow

A top Microsoft Windows NT security expert treated several well-known NT hackers to dinner during last week's Black Hat Briefings security conference in Las Vegas. One of the wined-and-dined hackers reports that the meal didn't result in a truce as much as a gentlemen's agreement. The hackers said they'll notify Microsoft first before going public with any security holes. In return, they want public credit for their discoveries. So the way to a hacker's heart is through the stomach, after all.

Egads! Zoinks!

Branding is everything in this industry. So to better attract attention to its line of storage networking hubs, Gadzoox Microsystems in San Jose, Calif., decided on a name change. Ready for this? The firm will now go by Gadzoox Networks. The change from "microsystems" to "networks" is bound to rock the industry and catch the eye because the rest of the name is so run-of-the-mill, right? Well, it worked to some degree. Hard-drive market leader Seagate Technology invested $10 million in Gadzoox.

Deja vu all over again

Some refugees from Lotus are trying to replicate the success of Notes on the Web. Instinctive Technologies, a Cambridge, Mass., start-up headed by two former Lotus executives, next week will launch ERoom, Internet-based collaboration software. Instinctive is headed by Jeffrey Beir, a former senior vice president at Lotus' applications division, and Pito Salas, former director of technology at Lotus.

Universal no more

The database battle of the Universal Servers ended not with a bang, but a whimper — from a marketing standpoint, anyway. Both Oracle and Informix had laid claim to Universal Server as a product name for their multimedia-enabled databases. But after settling a lawsuit against Informix earlier this year, Oracle has now dropped the term and now refers to its databases as lowercase "universal data servers." Oracle "just sort of got outmaneuvered," said one bemused database analyst.

SAP help coming ASAP

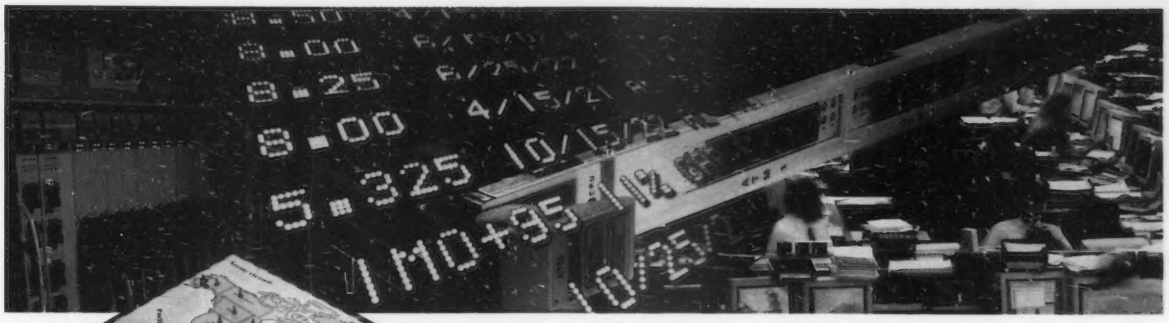
After finally implementing SAP R/3 applications, users have discovered they need better tools to manage the business-critical software. More help is on the way next month. Candle Corp. in Santa Monica, Calif., is preparing an option for its Candle Command Center that simplifies R/3 monitoring and maintenance, according to one analyst's preview. And start-up Envive Corp. in Palo Alto, Calif., will launch Inspector, a performance-analysis tool co-developed with SAP authors.

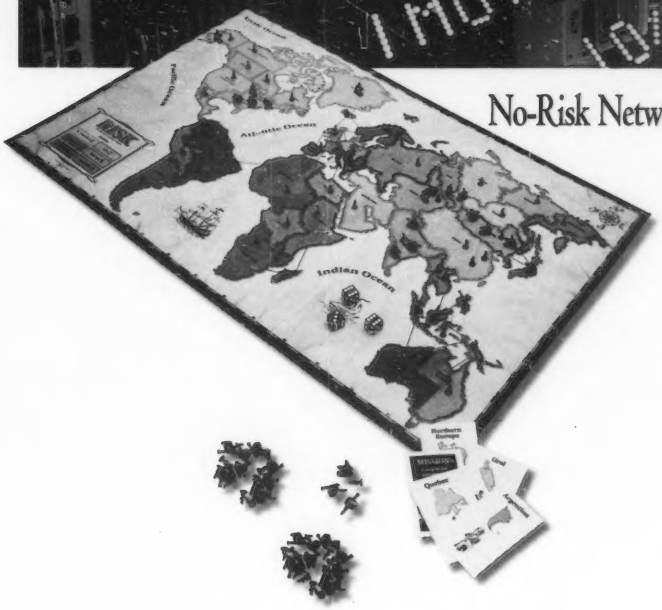
The language of politics

Microsoft had to recall a shipment of CD-ROMs to the United Arab Emirates after someone complained that labels for the Arabic-language version of Microsoft Office were written in Hebrew. Microsoft is investigating the flub by a contractor.

Platinum Software last week filed suit against Platinum Technology, claiming Platinum Technology's product branding, Internet domain name and marketing material may confuse "potential customers, business partners, industry and financial analysts and others." Because Platinum Software deals with client/server financial accounting software and Platinum Technology with database and systems management software, we would hope analysts and business partners could tell the difference. But considering Platinum Software's financial woes vs. Platinum Technology's success, the company may want to bag the lawsuit and ride the name confusion to renewed profits. We don't care what your name is, if you have a news tip, contact news editor Patricia Keefe at (508) 820-8183 or patricia_keefe@cw.com.

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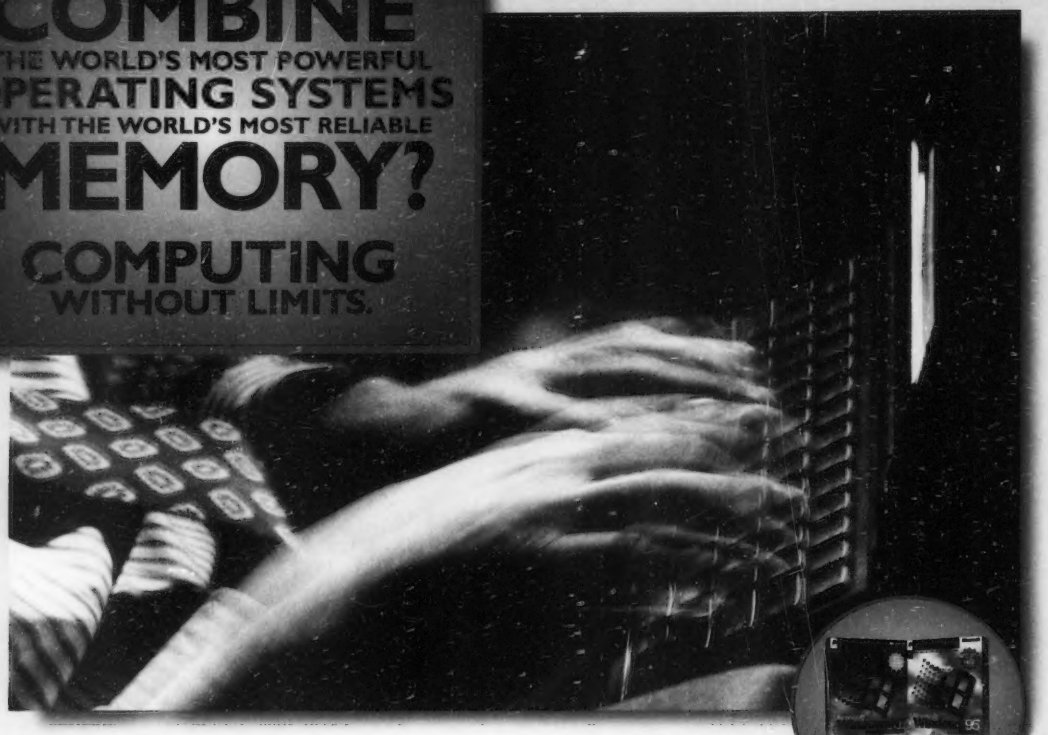
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WITHOUT LIMITS.



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